

Waterbody ID:

ssup037

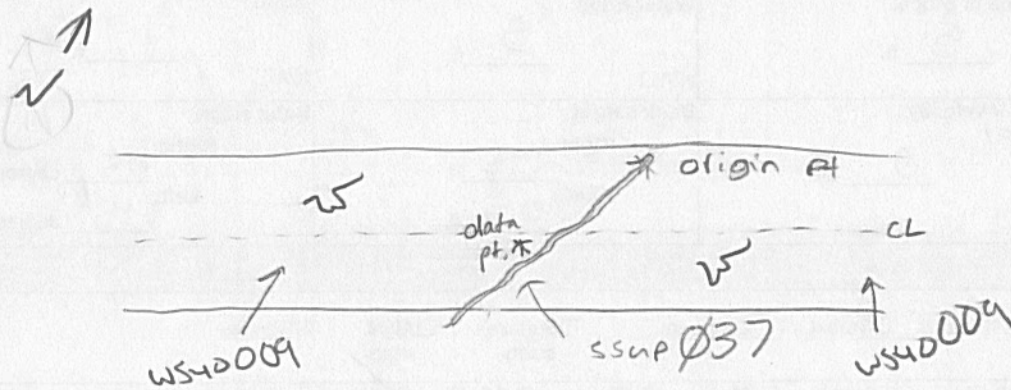
▪ **High Quality:** Natural, natural bank vegetation around entire waterbody; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline distance from centerline, data point locations, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody ssup037 facing northeast upstream.



Waterbody ssup037 facing southwest downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody ssup037 facing southeast across bank.

Linear Waterbody Data Sheet

Survey Description				
Project Name: <u>ALP</u>		Waterbody Name: <u>UNT to Asmar Swamp</u>	Waterbody ID: <u>SSUR006</u>	Date: <u>14 Jan 2016</u>
State: <u>VA</u>	County/Parish: <u>Suffolk</u>	Company: <u>ESI</u>	Crew Member Initials: <u>CAS CSM</u>	Photos: <u>W E S</u>
Tract Number(s): <u>26-166-B0041</u>		Nearest Milepost: <u>71.3</u>	Associated Wetland ID(s): <u>WSUD 011</u>	
Survey Type: <small>(check one)</small>				
<input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <small>(check one)</small>				
<input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial				
Waterbody Type: <small>(check one)</small>				
<input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>14</u> ft. Height: <u>2</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <small>(check all that apply)</small>		
		<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: <u>16</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>12</u> ft.	Width of Waterbody - Water Edge to Water Edge: <u>14</u> ft. N/A <input type="checkbox"/>	Depth of Water: <small>(Approx.)</small> <u>1</u> ft. N/A <input type="checkbox"/>	
Sinuosity: <small>(check one)</small> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <small>(Approx.)</small> <u>1</u> fps N/A <input type="checkbox"/>	Bank height Right: <u>3</u> ft. Left: <u>3</u> ft.	Bank slope Right: <u>90</u> degrees Left: <u>90</u> degrees	
Qualitative Attributes				
Water Appearance: <small>(check one)</small>				
<input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <small>(check all that apply)</small>				
<input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:				
% of Substrate: _____% _____% _____% _____% _____% <u>100</u> % _____% _____%				
Width of Riparian Zone: <u>_____</u> ft. N/A <input type="checkbox"/>		Vegetative Layers: <small>(check all that apply)</small>		
		<input checked="" type="checkbox"/> Trees: <u>15</u> in. <input checked="" type="checkbox"/> Saplings/Shrubs: <u>2</u> in. <input checked="" type="checkbox"/> Herbs: <u>N/A</u> in.		
Dominant Bank Vegetation (list): <u>Pinus taeda, Arundinaria gigantea</u>				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): <u>Submerged wood</u>				
Aquatic Organisms Observed (list): <u>None</u>				
T&E Species Observed (list): <u>None</u>				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): <u>Road, Waterline easement</u>				
Tributary is: <small>(check one)</small>				
<input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality*: <small>(check one)</small>				
<input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:
SSUR006

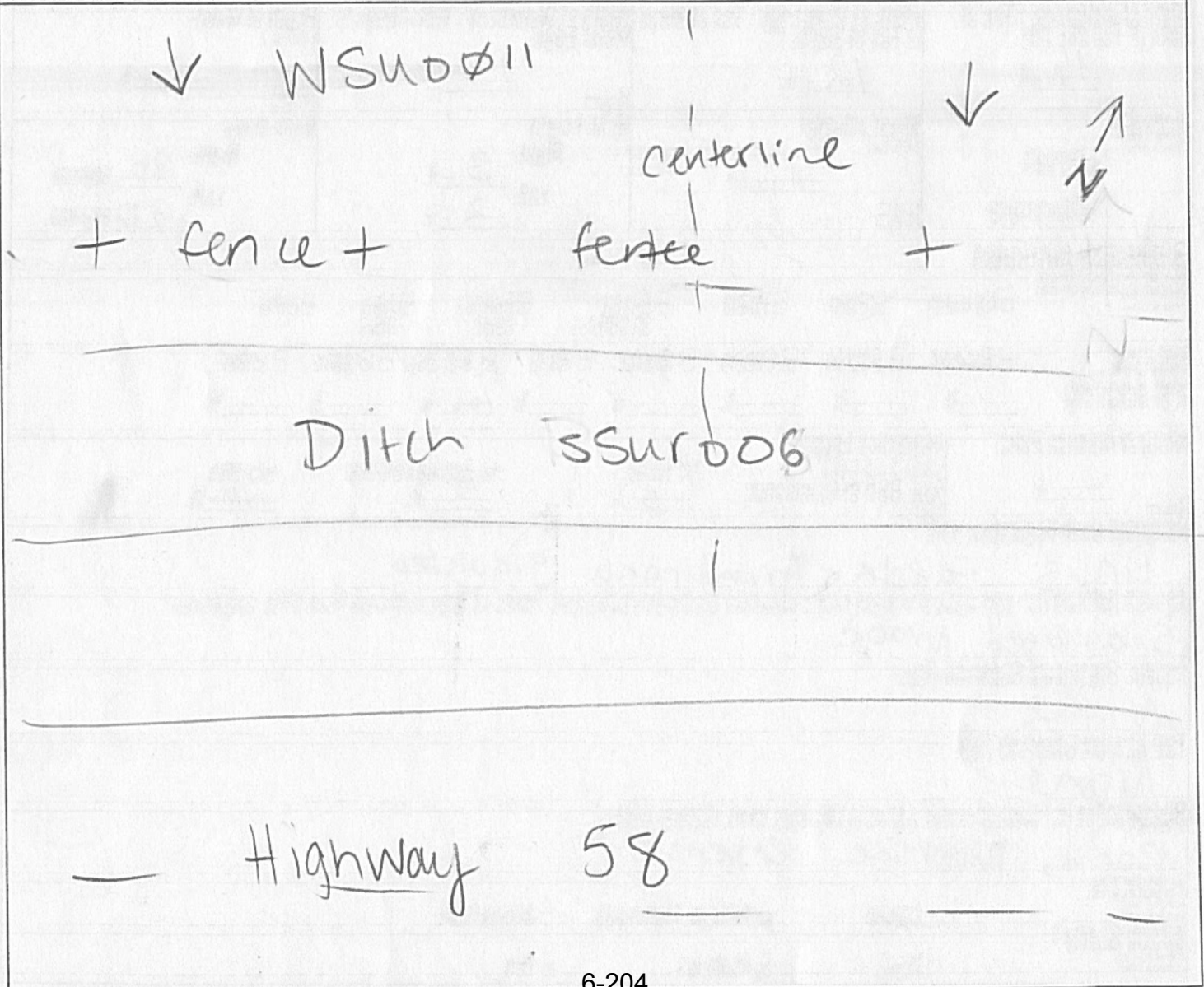
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody ssur006 facing east upstream.



Waterbody ssur006 facing west downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody ssur006 facing south across bank.

Linear Waterbody Data Sheet

Survey Description				
Project Name: ACP		Waterbody Name: East Ditch	Waterbody ID: schr009	Date: 21 Jan 2016
State: VA	County/Parish: Chesapeake	Company: ESI	Crew Member Initials: CAJ CSM	Photos: NW, SE, S
Tract Number(s): 27-001-D001		Nearest Milepost: 71.5	Associated Wetland ID(s): wchr002	
Survey Type: (check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: (check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial				
Waterbody Type: (check one) <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: 15 ft. Height: 3 ft. N/A <input type="checkbox"/>		OHWM Indicator: (check all that apply) <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: 19 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 12 ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> 13 ft.	Depth of Water: (Approx.) N/A <input type="checkbox"/> 2 ft.	
Sinuosity: (check one) <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: (Approx.) N/A <input type="checkbox"/> < 1 fps	Bank height Right: 4 ft. Left: 4 ft.	Bank slope Right: 80 degrees Left: 80 degrees	
Qualitative Attributes				
Water Appearance: (check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: (check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other: % of Substrate: _____% _____% _____% _____% _____% _____% 100% _____%				
Width of Riparian Zone: N/A <input type="checkbox"/> 40 ft.	Vegetative Layers: (check all that apply) <input checked="" type="checkbox"/> Trees: 10 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 3 in. <input checked="" type="checkbox"/> Herbs: N/A in.			
Dominant Bank Vegetation (list): Acer rubrum, Arundinaria gigantea				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Submerged wood				
Aquatic Organisms Observed (list): None				
T&E Species Observed (list): None				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Junk yard, Powerline Easement				
Tributary is: (check one) <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality *: (check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:
schr009

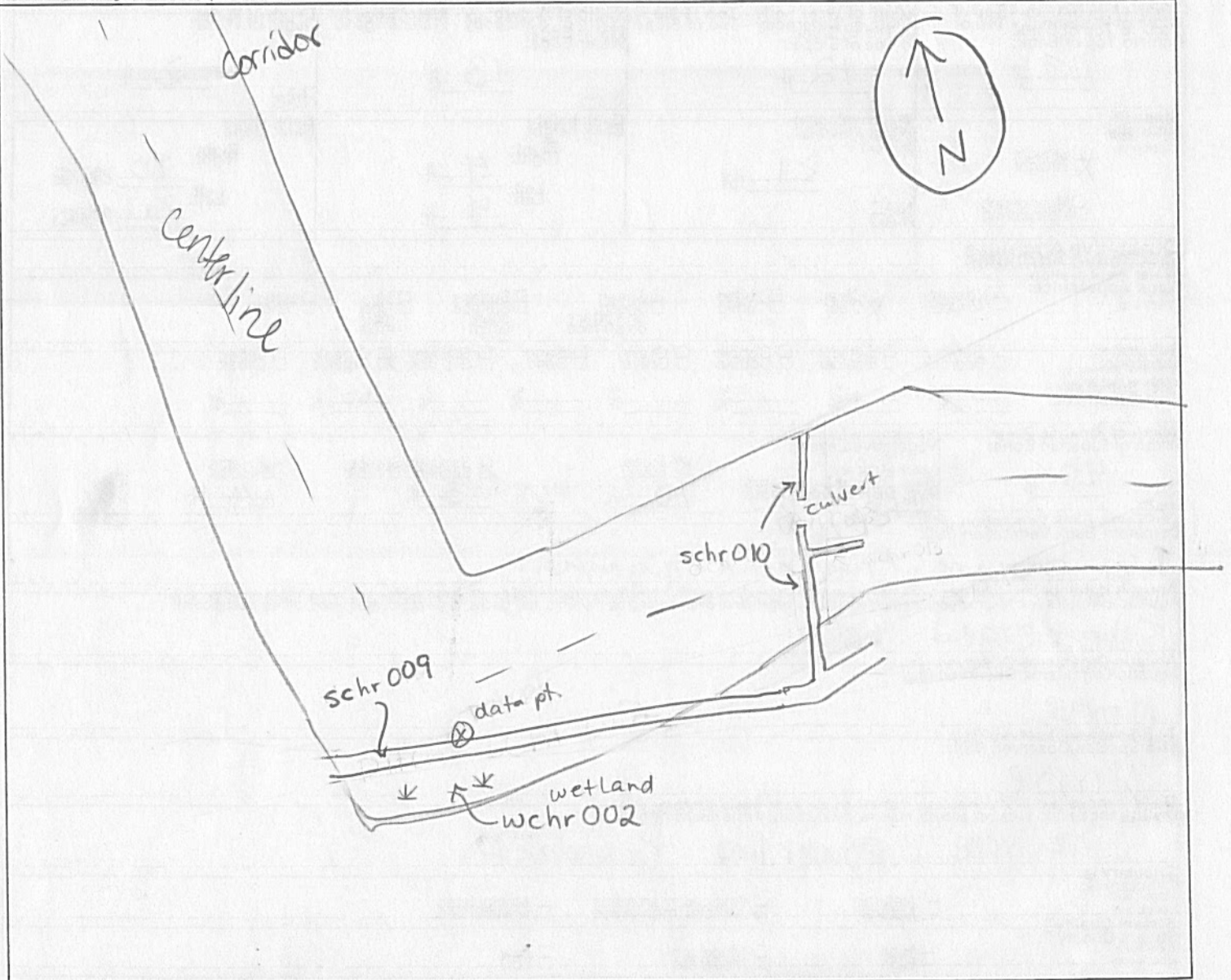
▪ **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody schr009 facing northwest upstream.



Waterbody schr009 facing southeast downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody schr009 facing south across bank.

Linear Waterbody Data Sheet

Survey Description				
Project Name: <u>ACP</u>		Waterbody Name: <u>UNT to East Ditch</u>	Waterbody ID: <u>schr010</u>	Date: <u>21 Jan 2016</u>
State: <u>VA</u>	County/Parish: <u>Chesapeake</u>	Company: <u>ESI</u>	Crew Member Initials: <u>CAJ CSM</u>	Photos: <u>NE, SW, E</u>
Tract Number(s): <u>27001-0002, 27-001-0001</u>		Nearest Milepost: <u>71.6</u>	Associated Wetland ID(s): <u>None</u>	
Survey Type: <small>(check one)</small> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <small>(check one)</small> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial				
Waterbody Type: <small>(check one)</small> <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>3</u> ft.	OHWM Height: <u>0.2</u> ft.	OHWM Indicator: <small>(check all that apply)</small>		
N/A <input type="checkbox"/>		<input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: <u>5</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>2</u> ft.	Width of Waterbody - Water Edge to Water Edge: <u>3</u> ft.	Depth of Water: <small>(Approx.)</small> <u>0.2</u> ft.	
N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	
Sinuosity: <small>(check one)</small>	Water velocity: <small>(Approx.)</small>	Bank height	Bank slope	
<input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	<u>0</u> fps N/A <input type="checkbox"/>	Right: <u>1</u> ft. Left: <u>1</u> ft.	Right: <u>70</u> degrees Left: <u>70</u> degrees	
Qualitative Attributes				
Water Appearance: <small>(check one)</small> <input type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input checked="" type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <small>(check all that apply)</small> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other:				
% of Substrate: _____% _____% _____% _____% _____% <u>50</u> % <u>50</u> % _____%				
Width of Riparian Zone: <u>N/A</u> ft.	Vegetative Layers: <small>(check all that apply)</small>			
N/A <input checked="" type="checkbox"/>	Avg. DBH of Dominants: <u>13</u> in. <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <u>3</u> in. <input checked="" type="checkbox"/> Herbs: <u>N/A</u> in.			
Dominant Bank Vegetation (list): <u>Liquidambar styraciflua, Arundinaria gigantea</u>				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): <u>None</u>				
Aquatic Organisms Observed (list): <u>None</u>				
T&E Species Observed (list): <u>None</u>				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): <u>Junk yard, culvert</u>				
Tributary is: <small>(check one)</small> <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality*: <small>(check one)</small> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				

6-211

Waterbody ID:
Schr 010

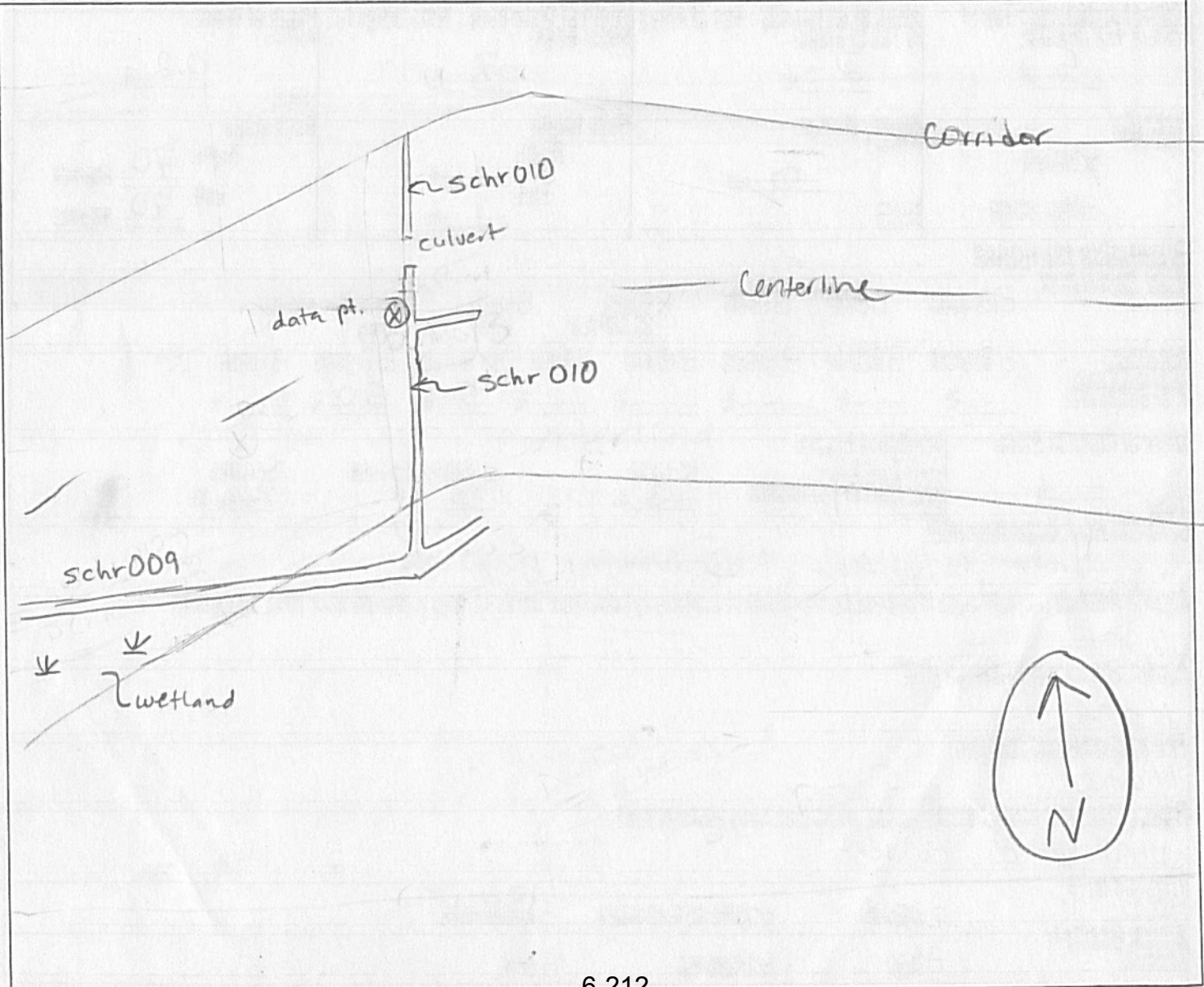
• **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody schr010 facing northeast upstream.



Waterbody schr010 facing southwest downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody schr010 facing west across bank.

Linear Waterbody Data Sheet

Survey Description				
Project Name: ACP		Waterbody Name: LINT TO E. Ditch		Waterbody ID: schr011
Date: 21 Jan 2016				
State: VA	County/Parish: Chesapeake	Company: ESI	Crew Member Initials: CAO CSM	Photos: N, S, E
Tract Number(s): 27-001-0003, 27-001-0004		Nearest Milepost: 71.7	Associated Wetland ID(s): None	
Survey Type: (check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: (check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial				
Waterbody Type: (check one) <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: 3 ft. Height: 0.2 ft. N/A <input type="checkbox"/>		OHWM Indicator: (check all that apply) <input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: 5 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 2 ft.	Width of Waterbody - Water Edge to Water Edge: 3 ft. N/A <input type="checkbox"/>	Depth of Water: (Approx.) 0.2 ft. N/A <input type="checkbox"/>	
Sinuosity: (check one) <input type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: (Approx.) 0 fps N/A <input type="checkbox"/>	Bank height Right: 1 ft. Left: 1 ft.	Bank slope Right: 70 degrees Left: 70 degrees	
Qualitative Attributes				
Water Appearance: (check one) <input type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input checked="" type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: (check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other: % of Substrate: _____% _____% _____% _____% _____% 50% 50% _____%				
Width of Riparian Zone: N/A <input checked="" type="checkbox"/> _____ ft.	Vegetative Layers: (check all that apply) <input checked="" type="checkbox"/> Trees: 13 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 3 in. <input checked="" type="checkbox"/> Herbs: N/A in. Avg. DBH of Dominants: (approx.)			
Dominant Bank Vegetation (list): Pinus taeda, Liquidambar styraciflua, Arundinaria gigantea				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): None				
Aquatic Organisms Observed (list): None				
T&E Species Observed (list): None				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Junk yard and waste, Powerline easement				
Tributary is: (check one) <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality*: (check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:
schr011

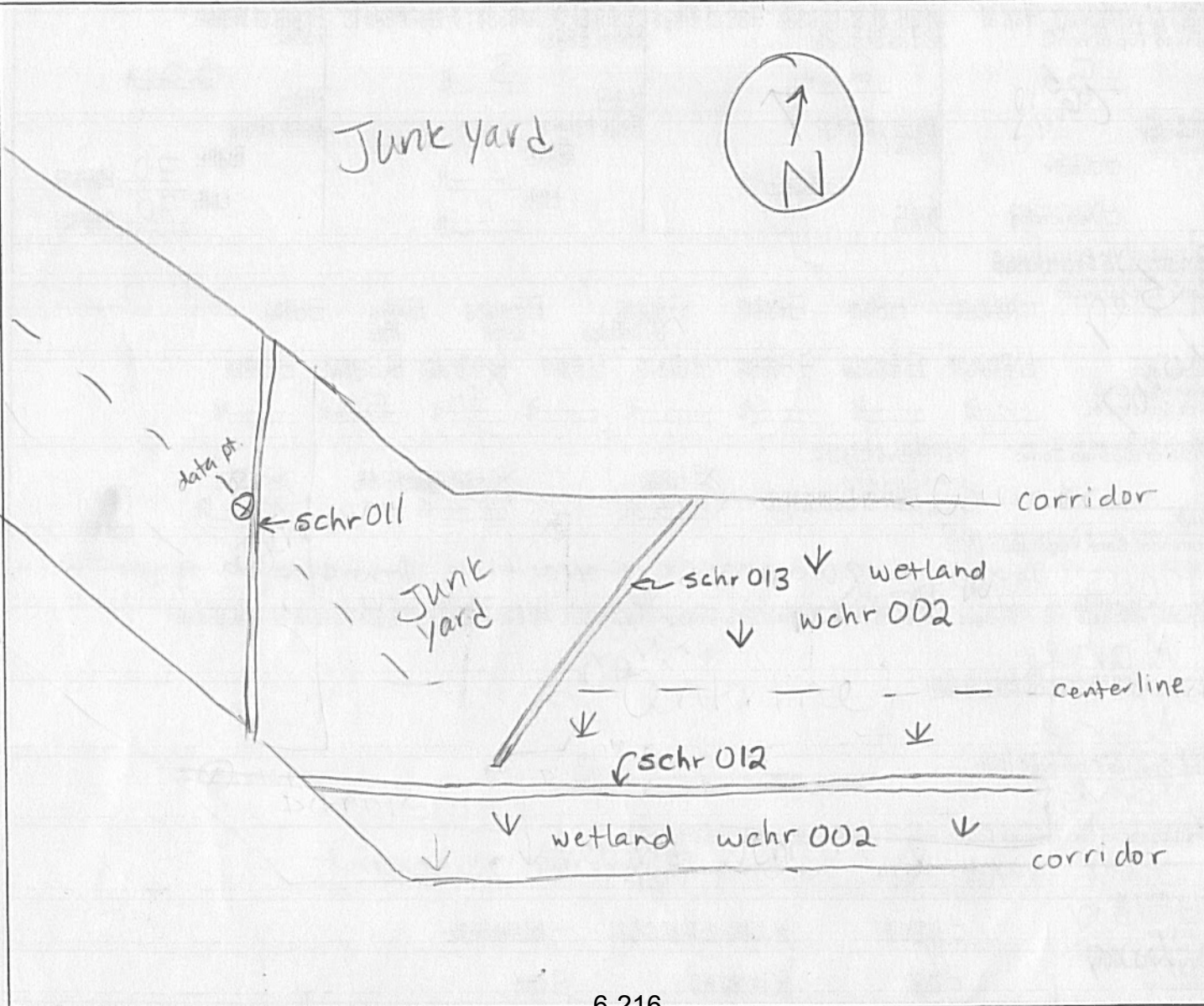
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody schr011 facing north upstream.



Waterbody schr011 facing south downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody schr011 facing east across bank.

Linear Waterbody Data Sheet

Survey Description				
Project Name: ACP		Waterbody Name: UNT to East Ditch	Waterbody ID: schr013	Date: 21 Jan. 2016
State: VA	County/Parish: Chesapeake	Company: ESI	Crew Member Initials: CAS CSM	Photos: NE, SW, NW
Tract Number(s): 27-001-D003, 27-001-D004		Nearest Milepost: 71.8	Associated Wetland ID(s): wchr002	
Survey Type: <small>(check one)</small>				
<input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <small>(check one)</small>				
<input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial				
Waterbody Type: <small>(check one)</small>				
<input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM <small>(check one)</small>	OHWM Indicator: <small>(check all that apply)</small>			
Width: 4 ft.	<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining			
Height: 0.5 ft.	<input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change			
N/A <input type="checkbox"/>				
Width of Waterbody - Top of Bank to Top of Bank:	Width of Waterbody - Toe of Slope to Toe of Slope:	Width of Waterbody - Water Edge to Water Edge:	Depth of Water: <small>(Approx.)</small>	
6 ft.	3 ft.	4 ft.	1 ft.	
N/A <input type="checkbox"/>				
Sinuosity: <small>(check one)</small>	Water velocity: <small>(Approx.)</small>	Bank height	Bank slope	
<input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	< 1 fps	Right: _____ ft. Left: _____ ft.	Right: 40 degrees Left: 40 degrees	
N/A <input type="checkbox"/>				
Qualitative Attributes				
Water Appearance: <small>(check one)</small>				
<input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <small>(check all that apply)</small>				
<input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other:				
% of Substrate: _____% _____% _____% _____% _____% _____% 100 % _____%				
Width of Riparian Zone:	Vegetative Layers: <small>(check all that apply)</small>			
10 ft.	<input checked="" type="checkbox"/> Trees: 6 in. <input checked="" type="checkbox"/> Saplings/Shrubs: _____ in. <input checked="" type="checkbox"/> Herbs: N/A in.			
N/A <input type="checkbox"/>				
Dominant Bank Vegetation (list): Acer rubrum, Arundinaria gigantea, Smilax sp.				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Submerged wood				
Aquatic Organisms Observed (list): None				
T&E Species Observed (list): None				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Junk yard				
Tributary is: <small>(check one)</small>				
<input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality *: <small>(check one)</small>				
<input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:
schr013

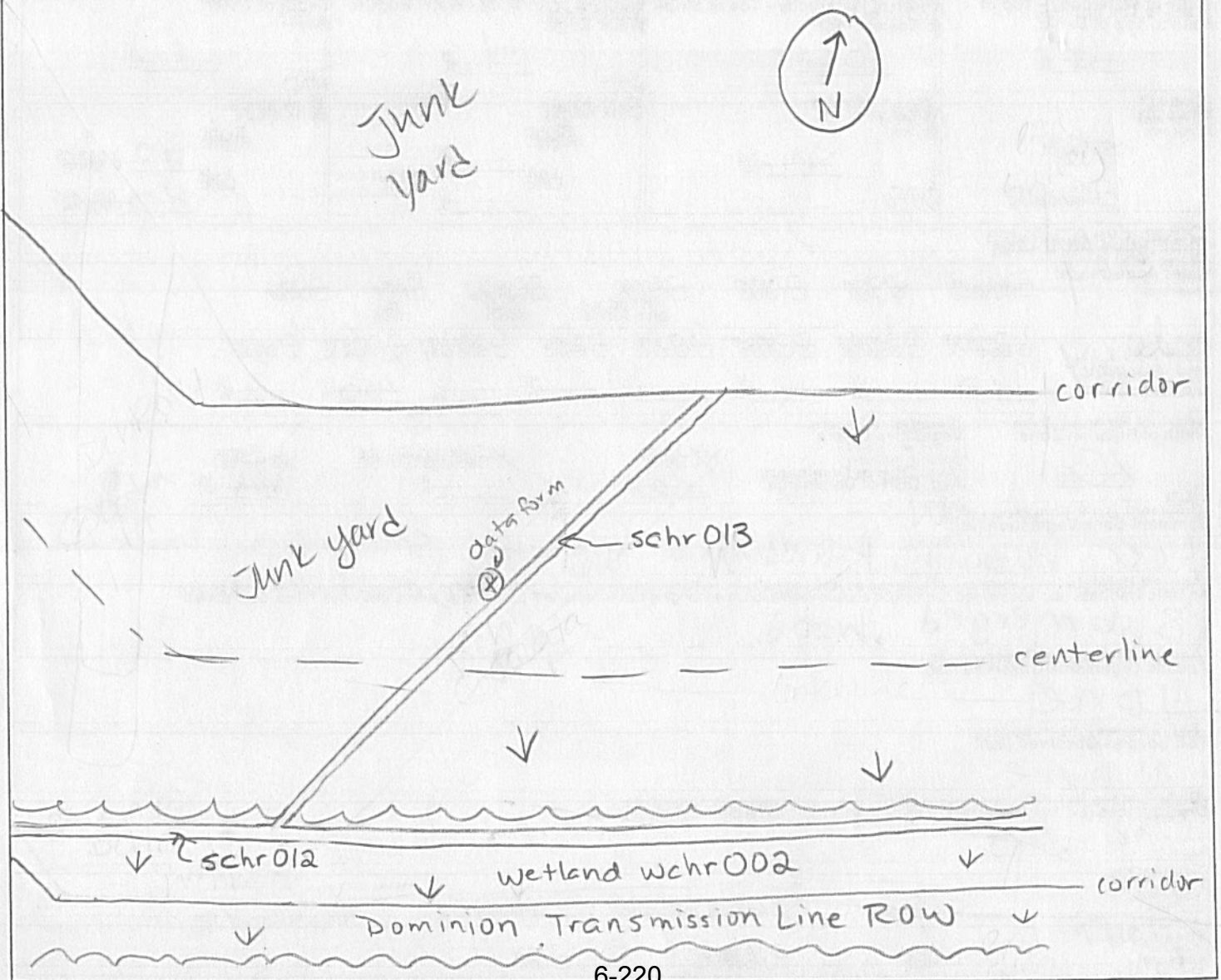
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody schr013 facing northeast upstream.



Waterbody schr013 facing southwest downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody schr013 facing northwest across bank.

Linear Waterbody Data Sheet

Survey Description				
Project Name: ACP		Waterbody Name: UNT to Dismal Swamp		Waterbody ID: schr006
State: VA		County/Parish: Chesapeake	Company: ESI-1	Date: 7/31/15
Tract Number(s): 27-00Z		Nearest Milepost: 70	Crew Member Initials: RAM/CSM	Photos: foting W, E
Associated Wetland ID(s): NA				
Survey Type: (check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: (check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial				
Waterbody Type: (check one) <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: 10 ft.		OHWM Indicator: (check all that apply) <input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining		
Height: 1.5 ft.		<input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
N/A <input type="checkbox"/>				
Width of Waterbody - Top of Bank to Top of Bank: 15 ft.		Width of Waterbody - Toe of Slope to Toe of Slope: 3 ft.		Depth of Water: (Approx.) 10 ft.
Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/>		Bank height Right: 3 ft. Left: 3 ft.		Bank slope Right: 45 degrees Left: 45 degrees
Sinuosity: (check one) <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: (Approx.) 0 fps		
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>		
Qualitative Attributes				
Water Appearance: (check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: (check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/clay <input type="checkbox"/> Organic <input type="checkbox"/> Other: % of Substrate: _____% _____% _____% _____% _____% _____% _____%				
Width of Riparian Zone: 0 ft.		Vegetative Layers: (check all that apply) <input type="checkbox"/> Trees: _____ in. <input checked="" type="checkbox"/> Saplings/Shrubs: 1 in. <input type="checkbox"/> Herbs: _____ in.		
N/A <input type="checkbox"/>		Avg. DBH of Dominants: (approx.)		
Dominant Bank Vegetation (list): Vaccinium corymbosum Clethra alnifolia				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Consistent pool				
Aquatic Organisms Observed (list): None				
T&E Species Observed (list): None				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): None				
Tributary is: (check one) <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality*: (check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:

Schr 006

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

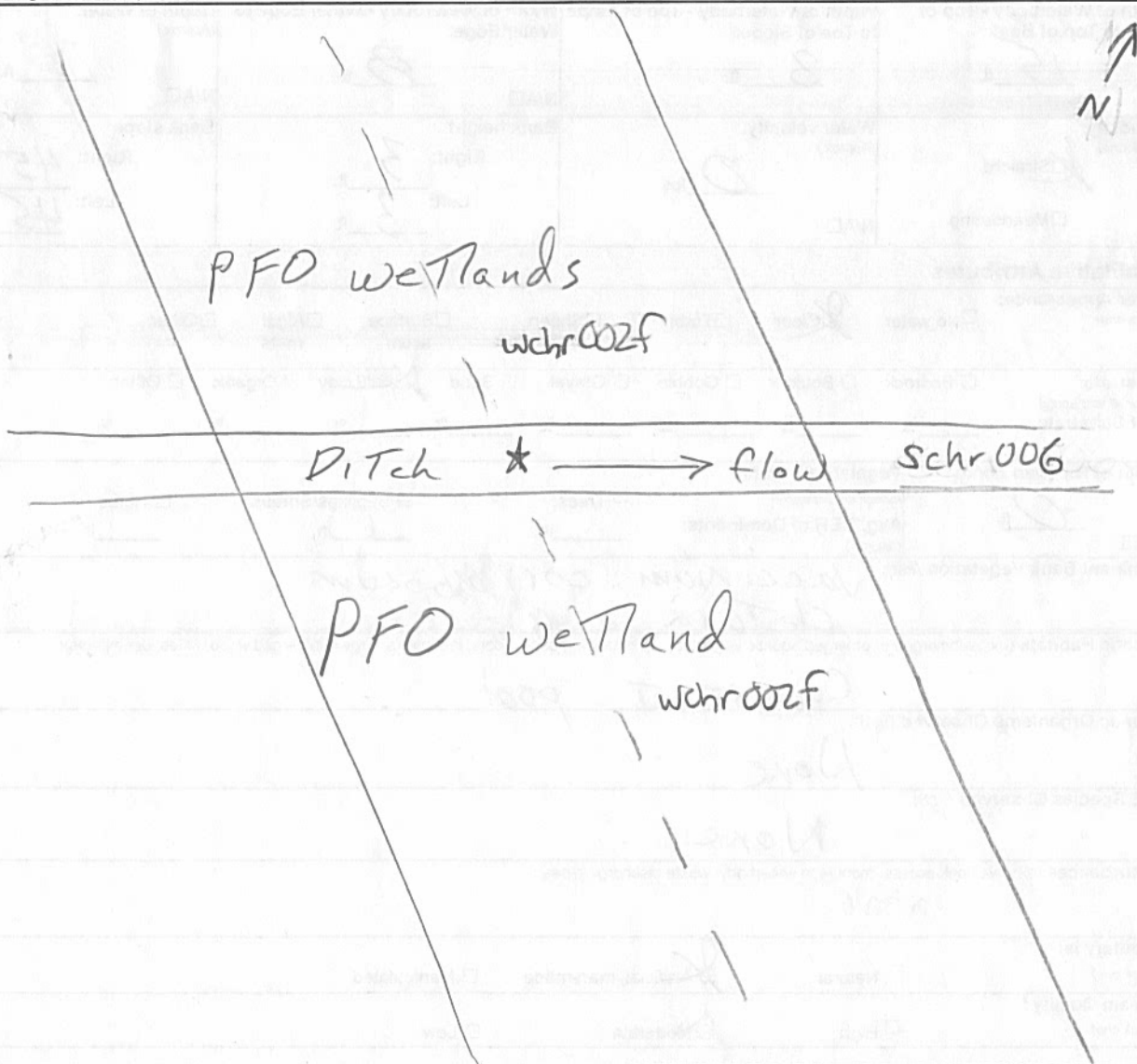
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

East/West Ditch, ^{NHD} Blue line feature 36.76319°N
76.42800°W

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody schr006 facing west upstream



Waterbody schr006 facing east downstream

Linear Waterbody Data Sheet

Survey Description							
Project Name: <u>ACP</u>		Waterbody Name: <u>ANT to discol swamp</u>	Waterbody ID: <u>Schr 005</u>	Date: <u>7/31/15</u>			
State: <u>VA</u>	County/Parish: <u>Chesapeake</u>	Company: <u>ESI-1</u>	Crew Member Initials: <u>RAM, ESM</u>	Photos: <u>facing W, E</u>			
Tract Number(s): <u>27-002</u>		Nearest Milepost:	Associated Wetland ID(s): <u>NA</u>				
Survey Type: <small>(check one)</small> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:							
Physical Attributes							
Stream Classification: <small>(check one)</small> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial							
Waterbody Type: <small>(check one)</small> <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:							
OHWM Width: <u>7</u> ft.	OHWM Indicator: <small>(check all that apply)</small>	<input type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving	<input type="checkbox"/> Wrested vegetation	<input type="checkbox"/> Scouring	<input checked="" type="checkbox"/> Water staining	
Height: <u>1</u> ft.	<input type="checkbox"/> Bent, matted, or missing vegetation	<input type="checkbox"/> Wrack line	<input type="checkbox"/> Litter and debris	<input type="checkbox"/> Abrupt plant community change	<input type="checkbox"/> Soil characteristic change	N/A <input type="checkbox"/>	
Width of Waterbody - Top of Bank to Top of Bank: <u>12</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>1</u> ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input checked="" type="checkbox"/>	Depth of Water: <small>(Approx.)</small> N/A <input checked="" type="checkbox"/>	Sinuosity: <small>(check one)</small> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <small>(Approx.)</small> N/A <input checked="" type="checkbox"/> fps	Bank height Right: <u>3</u> ft. Left: <u>3</u> ft.	Bank slope Right: <u>45</u> degrees Left: <u>45</u> degrees
Qualitative Attributes							
Water Appearance: <small>(check one)</small> <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:							
Substrate: <small>(check all that apply)</small>							
<input type="checkbox"/> Bedrock	<input type="checkbox"/> Boulder	<input type="checkbox"/> Cobble	<input type="checkbox"/> Gravel	<input type="checkbox"/> Sand	<input checked="" type="checkbox"/> Silt/clay	<input type="checkbox"/> Organic	<input type="checkbox"/> Other:
% of Substrate: _____%	_____%	_____%	_____%	_____%	<u>100</u> %	_____%	_____%
Width of Riparian Zone: N/A <input checked="" type="checkbox"/> ft.	Vegetative Layers: <small>(check all that apply)</small>	<input type="checkbox"/> Trees:	<input type="checkbox"/> Saplings/Shrubs:	<input checked="" type="checkbox"/> Herbs	Avg. DBH of Dominants: <small>(approx.)</small> _____ in.	_____ in.	<u>NA</u> in.
Dominant Bank Vegetation (list): <u>Woodwardia virginica</u>							
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): <u>none</u>							
Aquatic Organisms Observed (list): <u>none</u>							
T&E Species Observed (list): <u>none</u>							
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): <u>none</u>							
Tributary is: <small>(check one)</small> <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated							
Stream Quality*: <small>(check one)</small> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low							

Waterbody ID:

Schr005

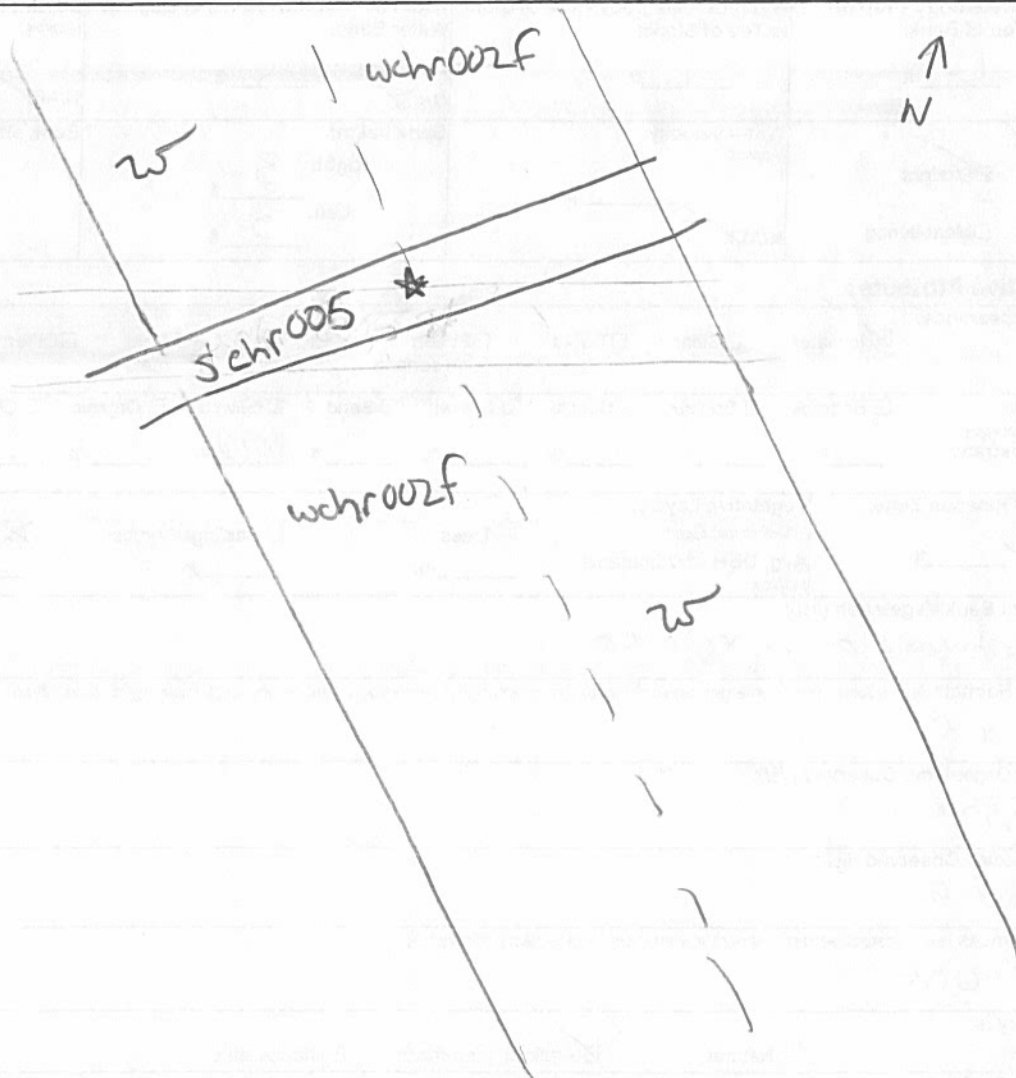
* **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody schr005 facing west upstream



Waterbody schr005 facing east downstream

Linear Waterbody Data Sheet

Survey Description			
Project Name: <u>ACP</u>		Waterbody Name: <u>UNT to Dismal Swamp</u>	
Waterbody ID: <u>schr004</u>		Date: <u>7/30/15</u>	
State: <u>VA</u>	County/Parish: <u>Chesapeake</u>	Company: <u>ESI-1</u>	Crew Member Initials: <u>RAM/CSM</u>
Photos: <u>fdcing W, E</u>			
Tract Number(s): <u>27-002</u>		Nearest Milepost: <u>70.5</u>	Associated Wetland ID(s): <u>NA</u>
Survey Type: (check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: (check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial			
Waterbody Type: (check one) <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: <u>15</u> ft.		OHWM Indicator: (check all that apply) <input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining	
Height: <u>1.5</u> ft.		<input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
N/A <input type="checkbox"/>			
Width of Waterbody - Top of Bank to Top of Bank: <u>20</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>12</u> ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> <u>12</u> ft.	Depth of Water: (Approx.) N/A <input type="checkbox"/> <u>1.5</u> ft.
Sinuosity: (check one) <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: (Approx.) <u>1</u> fps N/A <input type="checkbox"/>	Bank height Right: <u>4</u> ft. Left: <u>4</u> ft.	Bank slope Right: <u>60</u> degrees Left: <u>60</u> degrees
Qualitative Attributes			
Water Appearance: (check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: (check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate: _____% _____% _____% _____% _____% <u>100</u> % _____% _____%			
Width of Riparian Zone: N/A <input type="checkbox"/> <u>0</u> ft.	Vegetative Layers: (check all that apply) <input type="checkbox"/> Trees: _____ in. <input checked="" type="checkbox"/> Saplings/Shrubs: <u>3</u> in. <input type="checkbox"/> Herbs: _____ in. Avg. DBH of Dominants: _____ in.		
Dominant Bank Vegetation (list): <u>Liquidambar styraciflua</u>			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): <u>uniformly deep, little structure</u>			
Aquatic Organisms Observed (list): <u>None</u>			
T&E Species Observed (list): <u>None</u>			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): <u>None</u>			
Tributary is: (check one) <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality*: (check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

Schr 004

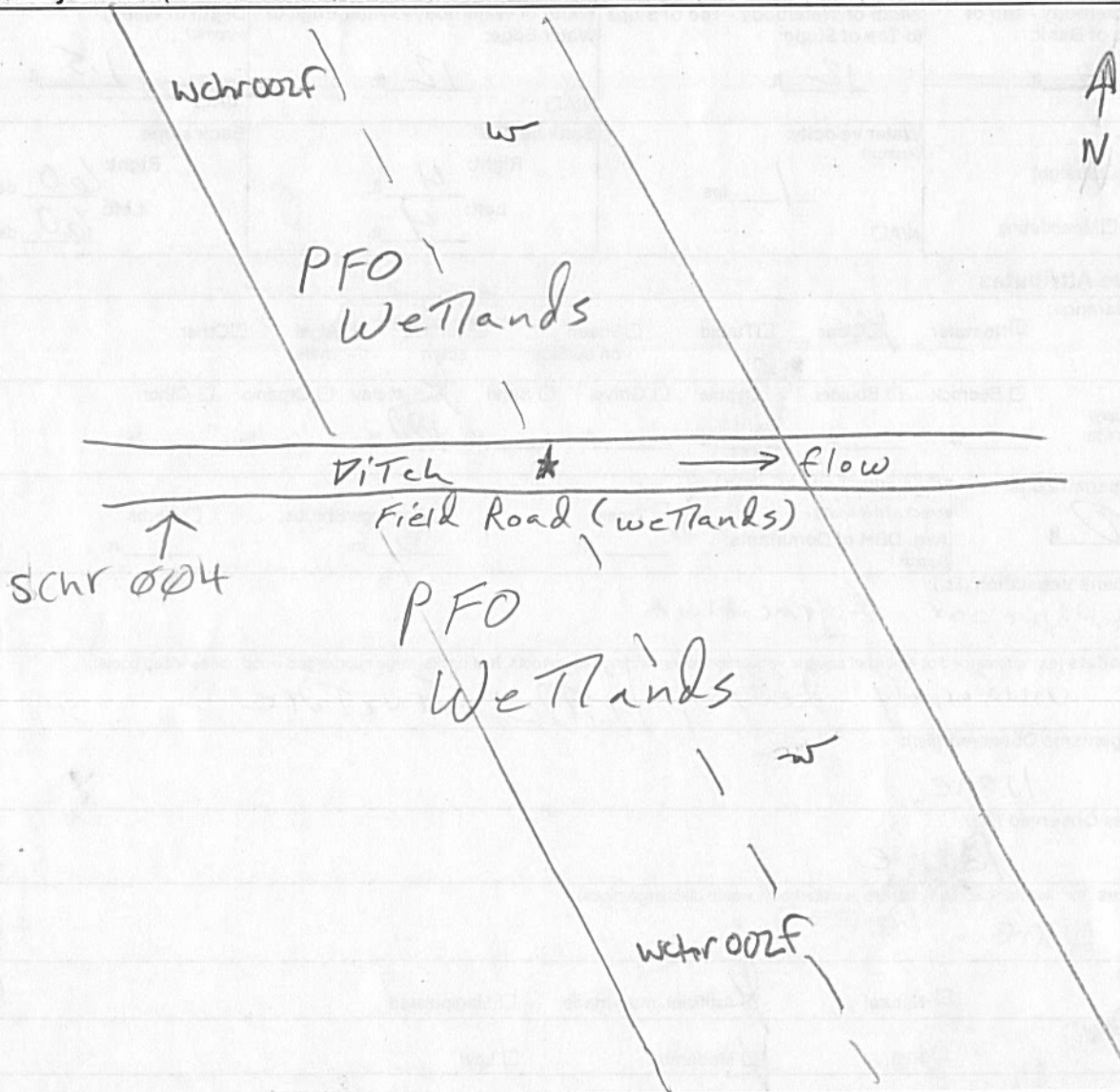
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody schr004 facing west upstream



Waterbody schr004 facing east downstream



Non-tidal ditch data point DCHC001 facing south



Non-tidal ditch data point DCHC002 facing east

Linear Waterbody Data Sheet

Survey Description			
Project Name: <i>ACP</i>		Waterbody Name: <i>LNT to Dismal Swamp</i>	
Waterbody ID: <i>Schr003</i>		Date: <i>7/30/15</i>	
State: <i>VA</i>	County/Parish: <i>Chesapeake</i>	Company: <i>ESI-1</i>	Crew Member Initials: <i>RAM/CSM</i>
Photos: <i>Facing N, S</i>			
Tract Number(s): <i>27-002</i>		Nearest Milepost: <i>71</i>	Associated Wetland ID(s): <i>NA</i>
Survey Type: <small>(check one)</small>			
<input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: <small>(check one)</small>			
<input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial			
Waterbody Type: <small>(check one)</small>			
<input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: <i>7</i> ft.		OHWM Indicator: <small>(check all that apply)</small>	
Height: <i>2</i> ft.		<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining	
N/A <input type="checkbox"/>		<input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: <i>7</i> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <i>3</i> ft.	Width of Waterbody - Water Edge to Water Edge: <i>7</i> ft.	Depth of Water: <small>(Approx.)</small> <i>2</i> ft.
Sinuosity: <small>(check one)</small>		Water velocity: <small>(Approx.)</small>	
<input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		<input type="checkbox"/> N/A <i>0</i> fps	
		Bank height	
		Right: <i>1</i> ft.	
		Left: <i>1</i> ft.	
		Bank slope	
		Right: <i>90</i> degrees	
		Left: <i>90</i> degrees	
Qualitative Attributes			
Water Appearance: <small>(check one)</small>			
<input type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input checked="" type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <small>(check all that apply)</small>			
<input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate: _____% _____% _____% _____% _____% <i>100</i> % _____% _____%			
Width of Riparian Zone: <i>N/A</i> ft.		Vegetative Layers: <small>(check all that apply)</small>	
		<input type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input type="checkbox"/> Herbs	
		Avg. DBH of Dominants: <small>(approx.)</small> _____ in. <i>4</i> in. _____ in.	
Dominant Bank Vegetation (list): <i>Liquidambar, Styraciflua, Acer rubrum</i>			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): <i>Twig dams, pools, leaf packs</i>			
Aquatic Organisms Observed (list): <i>None observed</i>			
T&E Species Observed (list): <i>None</i>			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): <i>none</i>			
Tributary is: <small>(check one)</small>			
<input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality*: <small>(check one)</small>			
<input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			

Waterbody ID:

Schr003

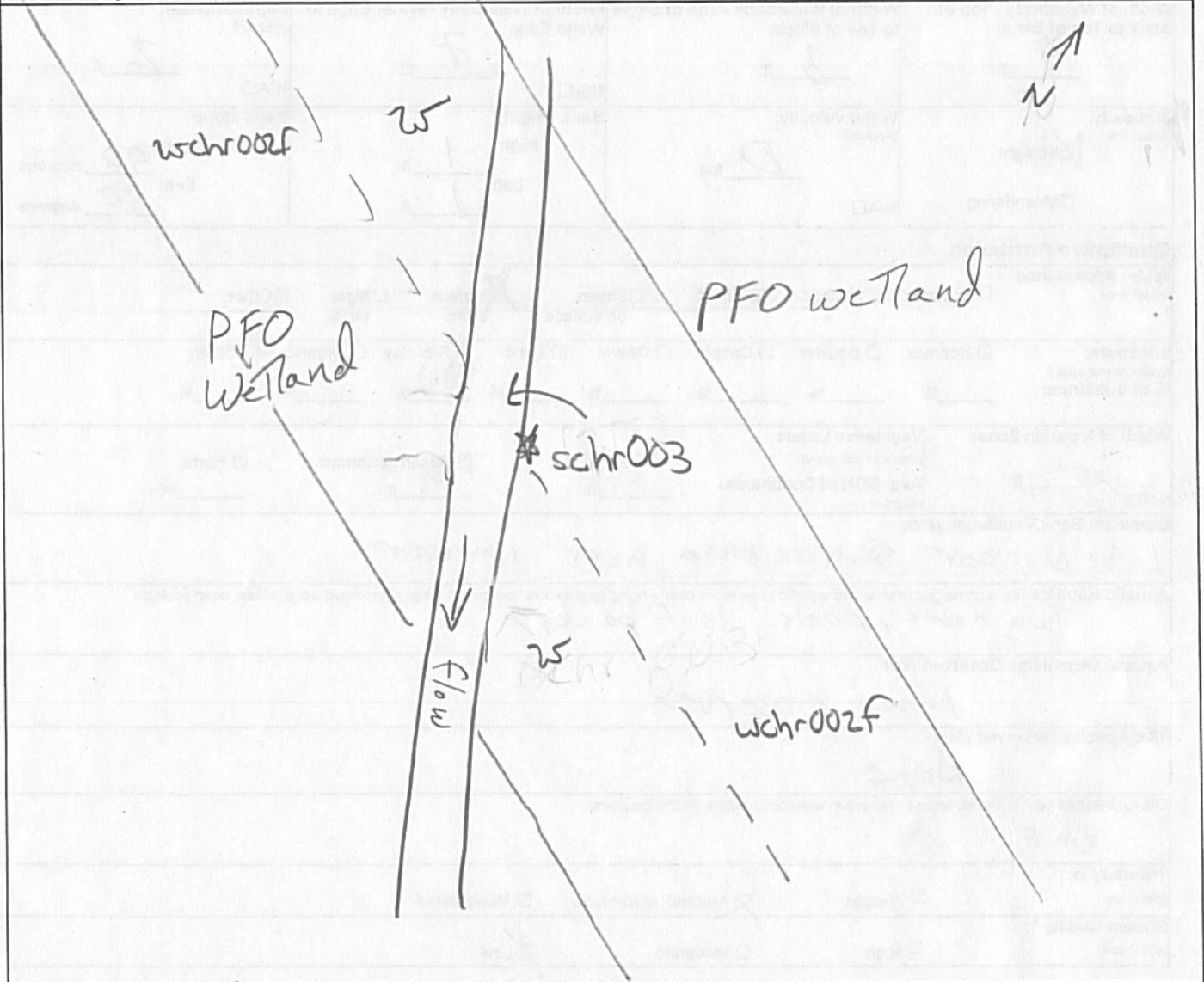
• **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody schr003 facing north upstream



Waterbody schr003 facing south downstream

Linear Waterbody Data Sheet

Survey Description			
Project Name: ACP	Waterbody Name: UNT to Dismal Swamp	Waterbody ID: schr001	Date: 7/29/15
State: VA	County/Parish: Chesapeake	Company: EST-1	Crew Member Initials: RAM, ESM
Tract Number(s): 27-006		Nearest Milepost: 72	Photos: facing N, S
Associated Wetland ID(s): WCHR 001			
Survey Type: (check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: (check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial			
Waterbody Type: (check one) <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: 15 ft. Height: 1.3 ft. N/A <input type="checkbox"/>		OHWM Indicator: (check all that apply) <input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: 18 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 15 ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> 15 ft.	Depth of Water: (Approx.) N/A <input type="checkbox"/> 1.0 ft.
Sinuosity: (check one) <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: (Approx.) 1/15 fps N/A <input type="checkbox"/>	Bank height Right: 8 ft. Left: 8 ft.	Bank slope Right: 90 degrees Left: 60 degrees
Qualitative Attributes			
Water Appearance: (check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: (check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate: _____% _____% _____% _____% _____% 100% _____% _____%			
Width of Riparian Zone: N/A <input type="checkbox"/> _____ ft.	Vegetative Layers: (check all that apply) <input checked="" type="checkbox"/> Trees: 4 in. <input type="checkbox"/> Saplings/Shrubs: _____ in. <input type="checkbox"/> Herbs: _____ in. Avg. DBH of Dominants: (approx.)		
Dominant Bank Vegetation (list): Acer rubrum			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): none			
Aquatic Organisms Observed (list): none			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): none			
Tributary is: (check one) <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality*: (check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

Schr001

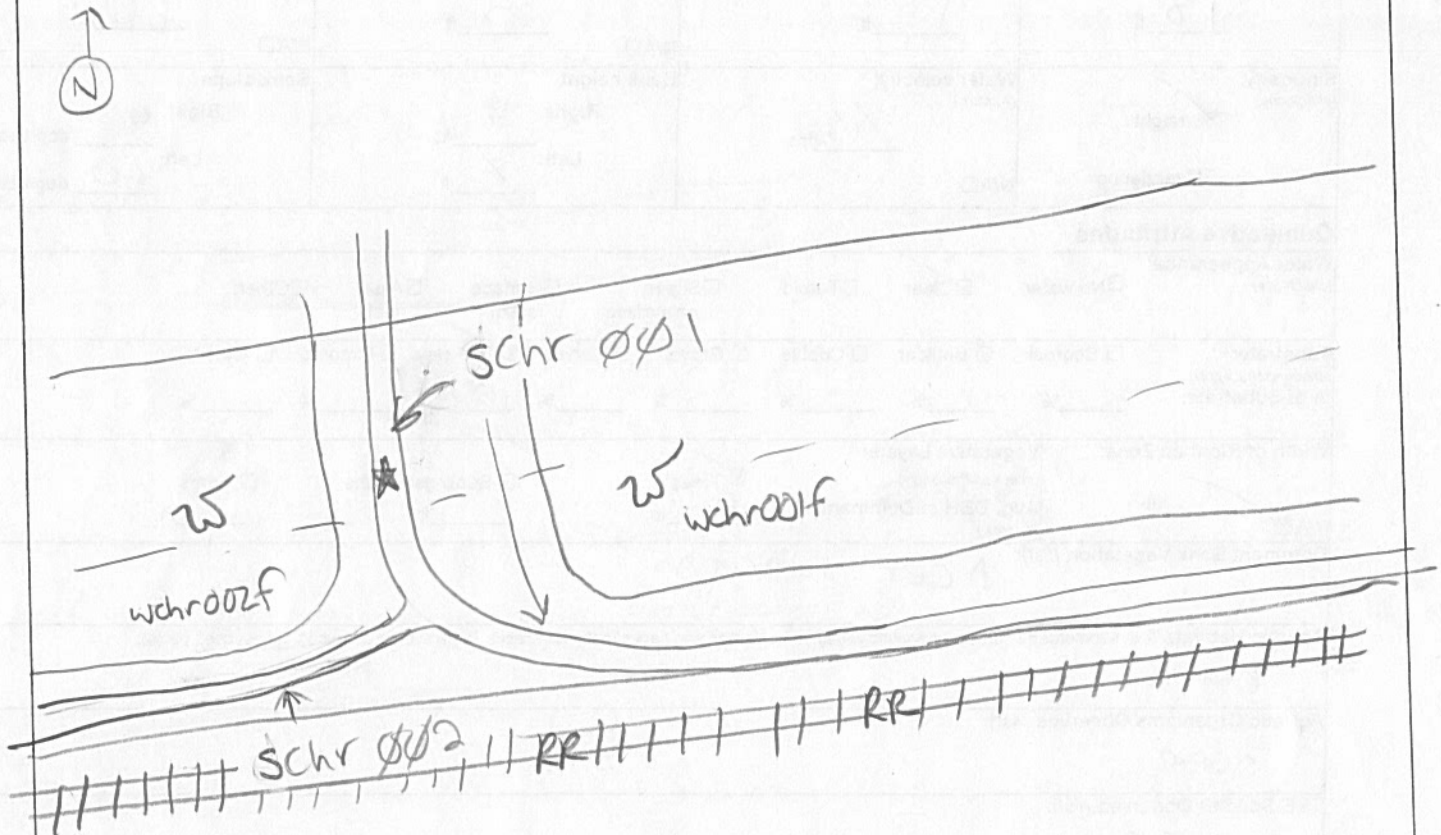
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody schr001 facing north upstream



Waterbody schr001 facing south downstream

Environmental Field Surveys
Waterbody Photo Page



Waterbody dchr001 facing north upstream



Waterbody dchr001 facing south downstream



Non-tidal ditch data point DCHC003 facing west

Linear Waterbody Data Sheet

Survey Description			
Project Name: <u>ACP</u>	Waterbody Name: <u>Unit to Dismal Swamp</u>	Waterbody ID: <u>Schp002</u>	Date: <u>10/26/15</u>
State: <u>VA</u>	County/Parish: <u>Chesapeake</u>	Company: <u>ESI</u>	Crew Member Initials: <u>RT, KM</u>
Photos: <u>Facing N, S, E</u>			
Tract Number(s): <u>27-606</u>		Nearest Milepost: <u>79.3</u>	Associated Wetland ID(s): <u>None</u>
Survey Type: <small>(check one)</small> <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: <small>(check one)</small> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <small>(check one)</small> <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: <u>15</u> ft.	OHWM Indicator: <small>(check all that apply)</small>	<input checked="" type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving
Height: <u>2</u> ft.	<input type="checkbox"/> Bent, matted, or missing vegetation	<input type="checkbox"/> Wrack line	<input checked="" type="checkbox"/> Wrested vegetation
N/A <input type="checkbox"/>	<input type="checkbox"/> Litter and debris	<input type="checkbox"/> Abrupt plant community change	<input type="checkbox"/> Scouring
<input checked="" type="checkbox"/> Water staining			
Width of Waterbody - Top of Bank to Top of Bank: <u>20</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>12</u> ft.	Width of Waterbody - Water Edge to Water Edge: <u>15</u> ft.	Depth of Water: <small>(Approx.)</small> <u>0.3</u> ft.
Sinuosity: <small>(check one)</small> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <small>(Approx.)</small> <u>1</u> fps	Bank slope Right: <u>45</u> degrees Left: <u>45</u> degrees
Bank height Right: <u>4</u> ft. Left: <u>4</u> ft.			
Qualitative Attributes			
Water Appearance: <small>(check one)</small> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <small>(check all that apply)</small> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate: _____% _____% _____% _____% <u>90</u> % <u>10</u> % _____% _____%			
Width of Riparian Zone: <u>50</u> ft.	Vegetative Layers: <small>(check all that apply)</small>	<input checked="" type="checkbox"/> Trees: Avg. DBH of Dominants: <small>(approx.)</small> <u>7</u> in.	<input checked="" type="checkbox"/> Saplings/Shrubs: <u>2</u> in.
N/A <input type="checkbox"/>	<input checked="" type="checkbox"/> Herbs <u>NA</u> in.		
Dominant Bank Vegetation <small>(list)</small> : <u>Morella cerifera, Nyssa sylvatica, Liriodendron tulipifera, Arundinaria gigantea</u>			
Aquatic Habitats <small>(ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools)</small> : <u>submerged logs, leaf packs</u>			
Aquatic Organisms Observed <small>(list)</small> : <u>none observed</u>			
T&E Species Observed <small>(list)</small> : <u>none observed</u>			
Disturbances <small>(ex: livestock access, manure in waterbody, waste discharge pipes)</small> : <u>none observed</u>			
Tributary is: <small>(check one)</small> <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality [*] : <small>(check one)</small> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

Schp002

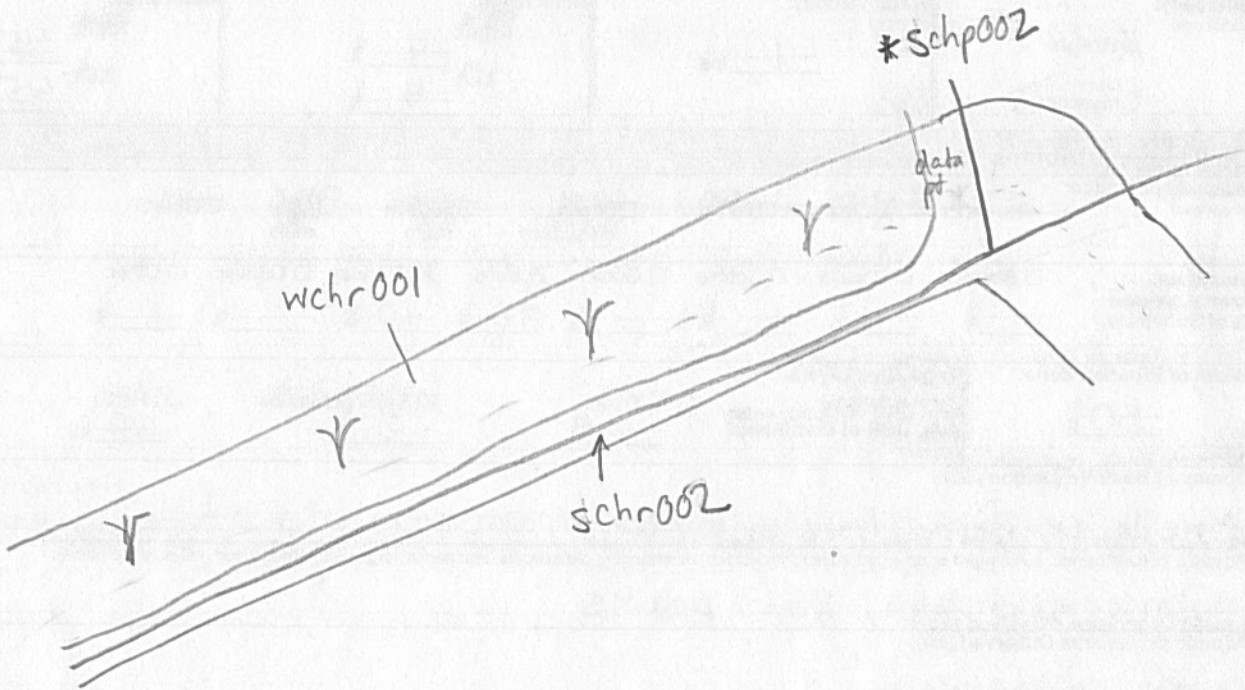
• **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody schp002 facing northwest upstream.



Waterbody schp002 facing southwest downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody schp002 facing northeast across bank.

Linear Waterbody Data Sheet

Survey Description			
Project Name: <u>ACP</u>	Waterbody Name: <u>Line to Portsmouth Ditch</u>	Waterbody ID: <u>Sch0003</u>	Date: <u>24 Sep 2015</u>
State: <u>VA</u>	County/Parish: <u>Chesapeake</u>	Company: <u>ESI</u>	Crew Member Initials: <u>LKR, CSM</u>
Photos: <u>EWN</u>			
Tract Number(s): <u>27-012</u>		Nearest Milepost: <u>72.3 - 72.7</u>	Associated Wetland ID(s): <u>NA</u>
Survey Type: (check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: (check one) <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: (check one) <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: _____ ft.	OHWM Indicator: (check all that apply) <u>None</u>	<input type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving
Height: _____ ft.	<input type="checkbox"/> Bent, matted, or missing vegetation	<input type="checkbox"/> Wrack line	<input type="checkbox"/> Litter and debris
<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Wrested vegetation	<input type="checkbox"/> Scouring	<input type="checkbox"/> Water staining
<input type="checkbox"/> Abrupt plant community change	<input type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: <u>3</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>1</u> ft.	Width of Waterbody - Water Edge to Water Edge: <u>1</u> ft.	Depth of Water: (Approx.) <u>0.1</u> ft.
Sinuosity: (check one) <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: (Approx.) <u>0</u> fps	Bank height Right: <u>12</u> ft. Left: <u>1</u> ft.	Bank slope Right: <u>75</u> degrees Left: <u>90</u> degrees
Qualitative Attributes			
Water Appearance: (check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: (check all that apply) % of Substrate: _____% _____% <u>20</u> % <u>20</u> % <u>50</u> % <u>10</u> % _____% _____%			
Width of Riparian Zone: <u>20</u> ft.	Vegetative Layers: (check all that apply) Avg. DBH of Dominants: (approx.)	<input checked="" type="checkbox"/> Trees: <u>10</u> in.	<input checked="" type="checkbox"/> Saplings/Shrubs: <u>2</u> in.
<input checked="" type="checkbox"/> N/A	<input checked="" type="checkbox"/> Herbs: <u>NA</u> in.		
Dominant Bank Vegetation (list): <u>Impatiens capensis, Acer rubrum, Woodwardia areolata, Pinus taeda</u>			
Aquatic Habitats (ex: submerged or emergent aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): <u>woody debris</u>			
Aquatic Organisms Observed (list): <u>None observed</u>			
T&E Species Observed (list): <u>None observed</u>			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): <u>Railroad</u>			
Tributary is: (check one) <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality*: (check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

Scho003

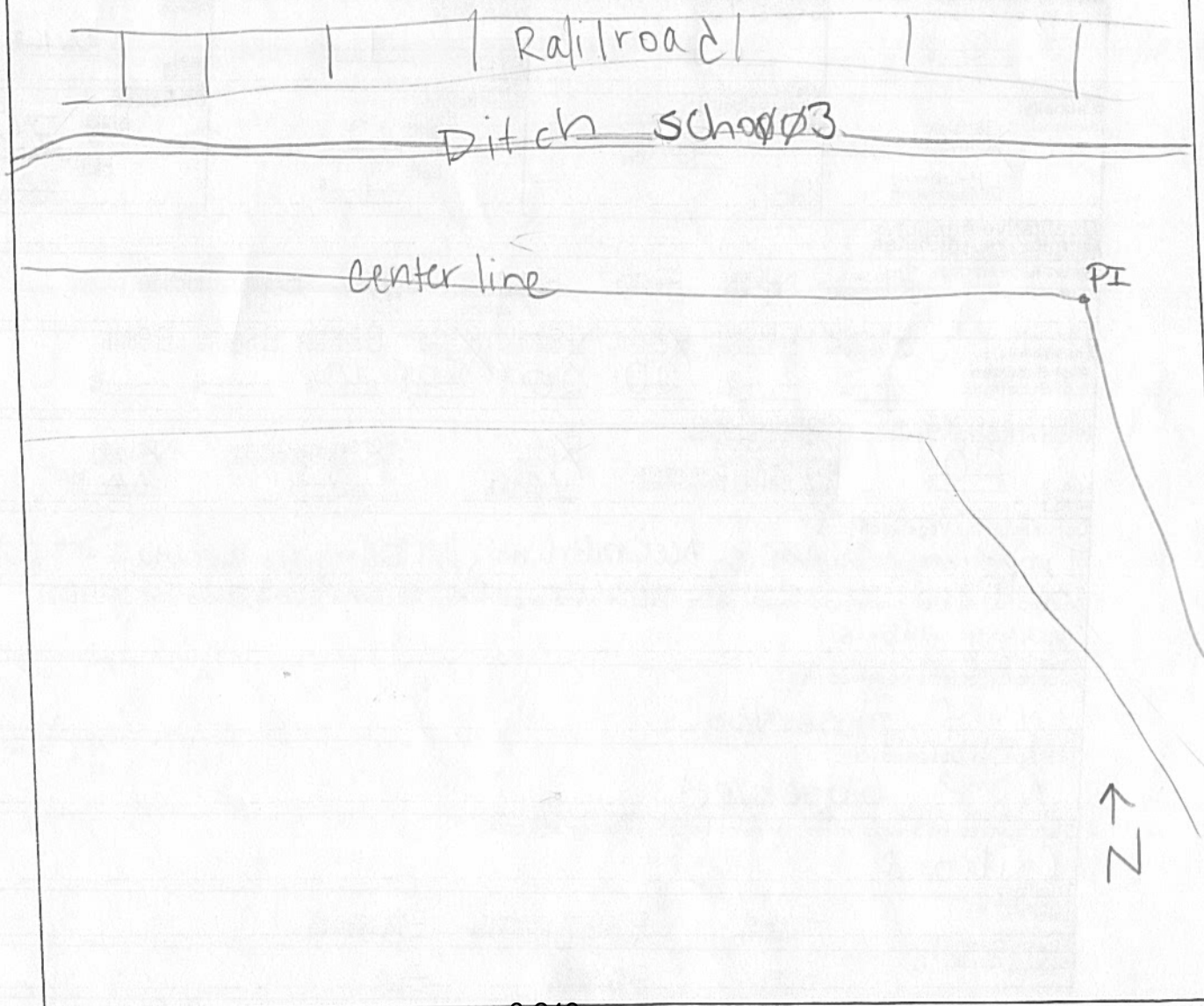
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody scho003 facing west upstream.



Waterbody scho003 facing east downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody scho003 facing north across bank.

Linear Waterbody Data Sheet

Survey Description				
Project Name: <u>ACP</u>		Waterbody Name: <u>DEEP CREEK</u>	Waterbody ID: <u>scho001</u>	Date: <u>09/30/15</u>
State: <u>VA</u>	County/Parish: <u>CHESAPEAKE</u>	Company: <u>ESI</u>	Crew Member Initials: <u>C.T., S.T.</u>	Photos: <u>N, S, E</u>
Tract Number(s): <u>27-026-A003, 27-026-A004</u> <u>27-026-A001, 27-026-A002</u>		Nearest Milepost: <u>72.8</u>	Associated Wetland ID(s): <u>wcho002, wcho003, wcho004</u>	
Survey Type: (check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: (check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial				
Waterbody Type: (check one) <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>14</u> ft.		OHWM Indicator: (check all that apply) <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining		
OHWM Height: <u>2</u> ft.		<input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input checked="" type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
N/A <input type="checkbox"/>				
Width of Waterbody - Top of Bank to Top of Bank: <u>17</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>11</u> ft.	Width of Waterbody - Water Edge to Water Edge: <u>13</u> ft.	Depth of Water: (Approx.) <u>1</u> ft.	
N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	
Sinuosity: (check one) <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Water velocity: (Approx.) <u>2</u> fps	Bank height Right: <u>2</u> ft. Left: <u>2</u> ft.	Bank slope Right: <u>45</u> degrees Left: <u>45</u> degrees	
N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	
Qualitative Attributes				
Water Appearance: (check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: (check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:				
% of Substrate: _____% _____% _____% _____% <u>100</u> % _____% _____% _____%				
Width of Riparian Zone: <u>100</u> ft.		Vegetative Layers: (check all that apply) <input checked="" type="checkbox"/> Trees: <u>6</u> in. <input checked="" type="checkbox"/> Saplings/Shrubs: <u>2</u> in. <input checked="" type="checkbox"/> Herbs: <u>NA</u> in.		
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>		
Dominant Bank Vegetation (list): <u>Arundinaria gigantea, Phytolacca americana, Murdahpina keisak, Vaccinium corymbosum.</u>				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): <u>Large submerged wood</u>				
Aquatic Organisms Observed (list): <u>None observed</u>				
T&E Species Observed (list): <u>None observed</u>				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): <u>BOX CULVERTS</u>				
Tributary is: (check one) <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality *: (check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:

Scho001

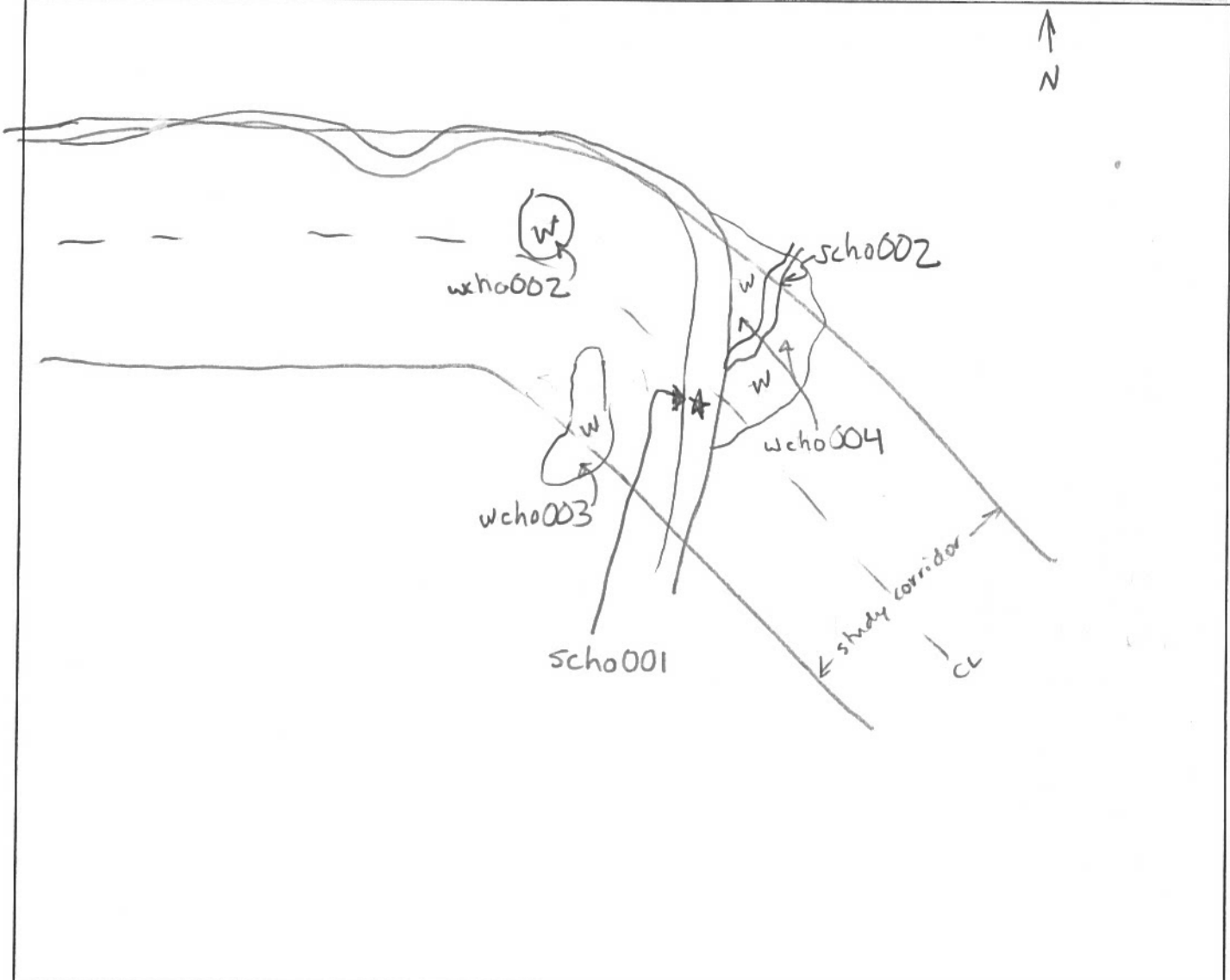
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody scho001 facing north upstream.



Waterbody scho001 facing south downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody scho001 facing east across bank.

Linear Waterbody Data Sheet

Survey Description				
Project Name: ACP		Waterbody Name: Deep Creek	Waterbody ID: scho001_s2	Date: 2/10/16
State: VA	County/Parish: Chesapeake	Company: ESI	Crew Member Initials: LR, MS	Photos: N, S, E
Tract Number(s): 27-026-1002 27-026-1004		Nearest Milepost: 77.4	Associated Wetland ID(s): wcho004	
Survey Type: (check one) <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: (check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial				
Waterbody Type: (check one) <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: 20 ft.	OHWM Height: 3 ft.	OHWM Indicator: (check all that apply)		
N/A <input type="checkbox"/>		<input checked="" type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving	<input type="checkbox"/> Wrested vegetation
		<input checked="" type="checkbox"/> Bent, matted, or missing vegetation	<input type="checkbox"/> Wrack line	<input checked="" type="checkbox"/> Litter and debris
			<input type="checkbox"/> Abrupt plant community change	<input type="checkbox"/> Scouring
				<input type="checkbox"/> Water staining
Width of Waterbody - Top of Bank to Top of Bank: 25 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 15 ft.	Width of Waterbody - Water Edge to Water Edge: 20 ft.	Depth of Water: (Approx.) 3 ft.	
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	
Sinuosity: (check one) <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Water velocity: (Approx.) 1 fps	Bank height Right: 4 ft. Left: 4 ft.	Bank slope Right: 45 degrees Left: 30 degrees	
N/A <input type="checkbox"/>	N/A <input type="checkbox"/>			
Qualitative Attributes				
Water Appearance: (check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: (check all that apply)				
<input type="checkbox"/> Bedrock	<input type="checkbox"/> Boulder	<input type="checkbox"/> Cobble	<input type="checkbox"/> Gravel	<input checked="" type="checkbox"/> Sand
<input type="checkbox"/> % of Substrate: _____%	<input type="checkbox"/> % of Substrate: _____%	<input type="checkbox"/> % of Substrate: _____%	<input type="checkbox"/> % of Substrate: _____%	<input checked="" type="checkbox"/> Silt/ clay 60% 40%
<input type="checkbox"/> % of Substrate: _____%	<input type="checkbox"/> % of Substrate: _____%	<input type="checkbox"/> % of Substrate: _____%	<input type="checkbox"/> % of Substrate: _____%	<input type="checkbox"/> Organic <input type="checkbox"/> Other:
Width of Riparian Zone: 100 ft.	Vegetative Layers: (check all that apply)	Trees: 5 in.	Saplings/Shrubs: 1 in.	Herbs NA in.
N/A <input type="checkbox"/>	Avg. DBH of Dominants: (approx.)			
Dominant Bank Vegetation (list): Arundinaria gigantea, Leucothoe sp., Quercus nigra				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): leaf packs, submerged wood				
Aquatic Organisms Observed (list): none observed				
T&E Species Observed (list): none observed				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): none observed				
Tributary Is: (check one) <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality *: (check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:

scho001-s2

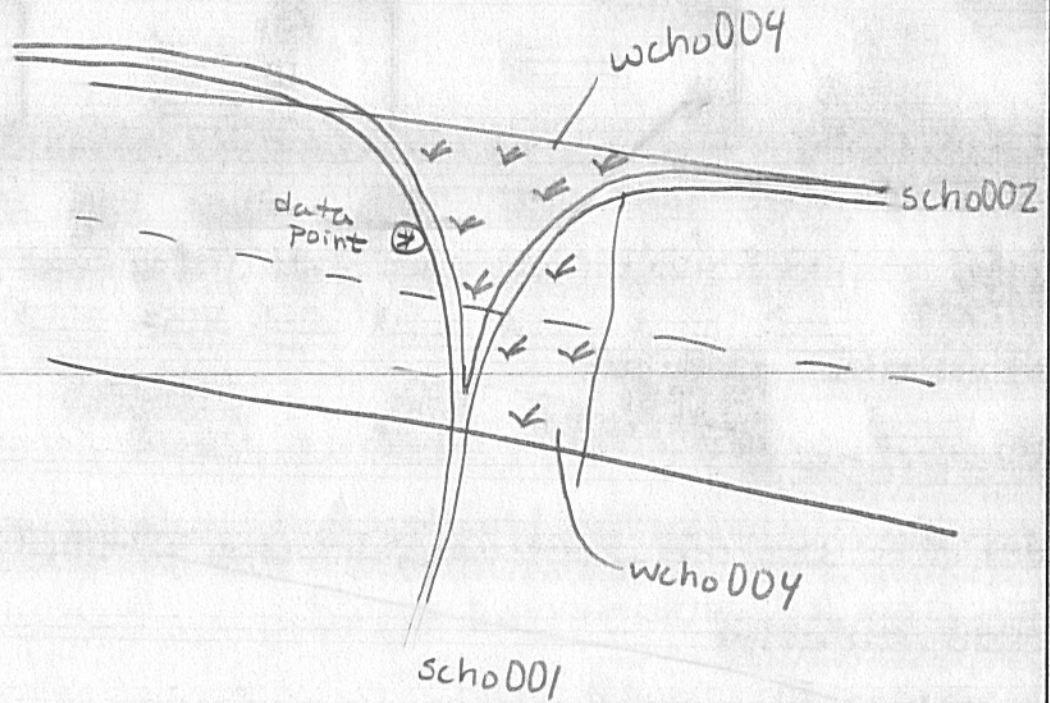
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody data point scho001_s2 facing north upstream.



Waterbody data point scho001_s2 facing south downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody data point scho001_s2 facing east across.

Linear Waterbody Data Sheet

Survey Description				
Project Name: ACP		Waterbody Name: UNT to Deep Creek		Waterbody ID: scho002
Date: 09/30/15				
State: VA	County/Parish: Chesapeake	Company: ESI	Crew Member Initials: C-J, S-I	Photos: NE, SW, NW
Tract Number(s): 27-026-A006 27-026-A003 27-026-A004		Nearest Milepost: 72.8	Associated Wetland ID(s): wcho004	
Survey Type: (check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: (check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial				
Waterbody Type: (check one) <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: 6 ft.		OHWM Indicator: (check all that apply) <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining		
OHWM Height: 2 ft.		<input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
N/A <input type="checkbox"/>				
Width of Waterbody - Top of Bank to Top of Bank: 7 ft.		Width of Waterbody - Toe of Slope to Toe of Slope: 5 ft.		Width of Waterbody - Water Edge to Water Edge: 5 ft.
				Depth of Water: (Approx.) 1 ft.
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>		N/A <input type="checkbox"/>
Sinuosity: (check one) <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering		Water velocity: (Approx.) 2 fps		Bank height Right: 3 ft. Left: 2 ft.
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>		Bank slope Right: 85 degrees Left: 75 degrees
Qualitative Attributes				
Water Appearance: (check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: (check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input type="checkbox"/> Silt/clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:				
% of Substrate: _____% _____% _____% _____% 100% _____% _____% _____%				
Width of Riparian Zone: 60 ft.		Vegetative Layers: (check all that apply) <input checked="" type="checkbox"/> Trees: 4 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 1 in. <input checked="" type="checkbox"/> Herbs: NA in.		
N/A <input type="checkbox"/>		Avg. DBH of Dominants: (approx.)		
Dominant Bank Vegetation (list): Murdannia keiskei, Rubus argutus, Woodwardia areolata, Lonicera japonica.				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs, woody debris, pools				
Aquatic Organisms Observed (list): Box turtle, Fish				
T&E Species Observed (list): none observed				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): none observed				
Tributary is: (check one) <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality*: (check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:

scho002

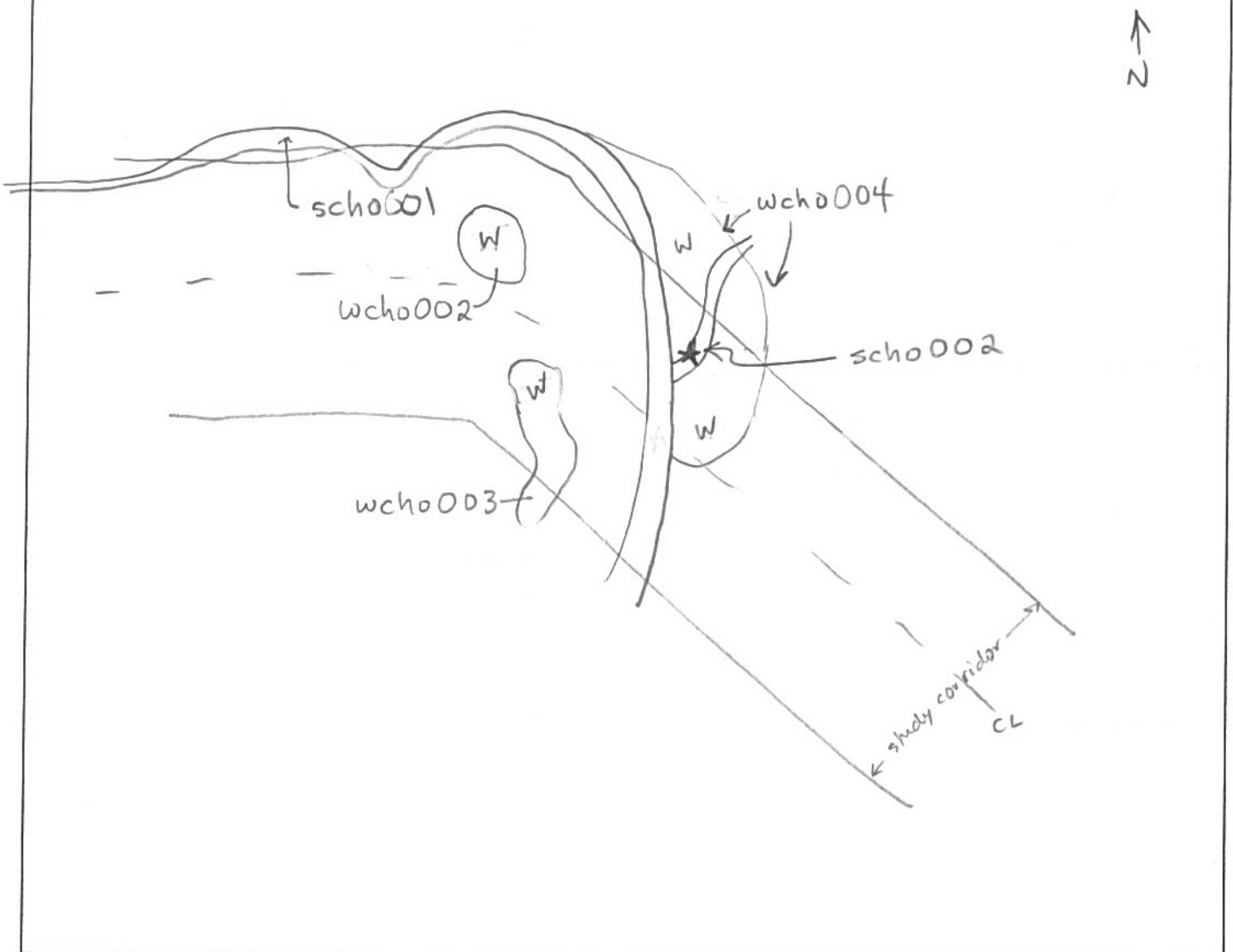
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody scho002 facing northeast upstream.



Waterbody scho002 facing southwest downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody scho002 facing northwest across bank.

Linear Waterbody Data Sheet

Survey Description				
Project Name: <u>ACP</u>		Waterbody Name: <u>LNT to Deep Creek</u>	Waterbody ID: <u>SchoD13</u>	Date: <u>2/10/16</u>
State: <u>VA</u>	County/Parish: <u>Chesapeake</u>	Company: <u>ESI</u>	Crew Member Initials: <u>LR, MS</u>	Photos: <u>Facing E, W, S</u>
Tract Number(s): <u>27-026-A006, 27-026-A005</u>		Nearest Milepost: <u>77.5</u>	Associated Wetland ID(s): <u>wcho004</u>	
Survey Type: (check one) <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: (check one) <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial				
Waterbody Type: (check one) <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>2</u> ft.	OHWM Height: <u>0.5</u> ft.	OHWM Indicator: (check all that apply) <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining		
N/A <input type="checkbox"/>	<input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change			
Width of Waterbody - Top of Bank to Top of Bank: <u>3</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>1</u> ft.	Width of Waterbody - Water Edge to Water Edge: <u>2</u> ft.	Depth of Water: (Approx.) <u>0.4</u> ft.	
N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	
Sinuosity: (check one) <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: (Approx.) <u>4</u> fps	Bank height Right: <u>1</u> ft. Left: <u>1</u> ft.	Bank slope Right: <u>50</u> degrees Left: <u>50</u> degrees	
N/A <input type="checkbox"/>	N/A <input type="checkbox"/>			
Qualitative Attributes				
Water Appearance: (check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: (check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:				
% of Substrate: _____% _____% _____% _____% <u>60</u> % <u>40</u> % _____% _____%				
Width of Riparian Zone: <u>30</u> ft.	Vegetative Layers: (check all that apply) <input checked="" type="checkbox"/> Trees: <u>4</u> in. <input checked="" type="checkbox"/> Saplings/Shrubs: <u>1</u> in. <input checked="" type="checkbox"/> Herbs: <u>NA</u> in.			
N/A <input type="checkbox"/>	Avg. DBH of Dominants: (approx.) _____ in.			
Dominant Bank Vegetation (list): <u>Pinus taeda, Junco effusus, Morella cerifera</u>				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): <u>leaf packs</u>				
Aquatic Organisms Observed (list): <u>none observed</u>				
T&E Species Observed (list): <u>none observed</u>				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): <u>none observed</u>				
Tributary Is: (check one) <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality*: (check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:

scho 013

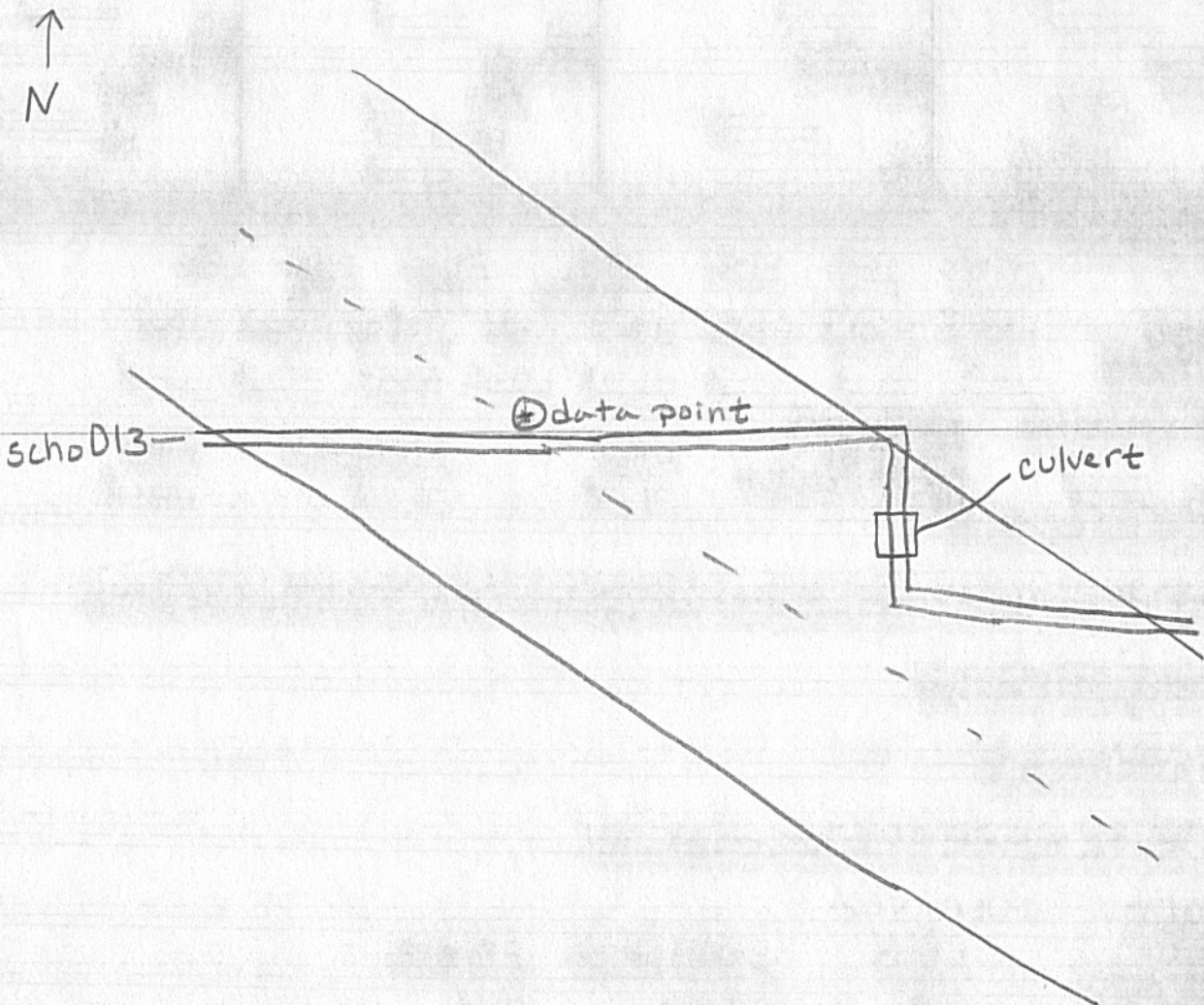
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody data point scho013 facing east upstream.



Waterbody data point scho013 facing west downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody data point scho013 facing south across.

Linear Waterbody Data Sheet

Survey Description			
Project Name: ACP	Waterbody Name: UNT to Deep Creek	Waterbody ID: SCHO014	Date: 2/11/16
State: VA	County/Parish: Chesapeake	Company: ESI	Crew Member Initials: LR, MS
Tract Number(s): 27-046, 27-047		Nearest Milepost: 78.3	Photos: Facing N, S, E
Associated Wetland ID(s): wcho 011			
Survey Type: (check one) <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: (check one) <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: (check one) <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: 3 ft.	OHWM Indicator: (check all that apply)	<input checked="" type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving
Height: 1 ft.	<input checked="" type="checkbox"/> Bent, matted, or missing vegetation	<input type="checkbox"/> Wrack line	<input type="checkbox"/> Litter and debris
N/A <input type="checkbox"/>		<input type="checkbox"/> Wrested vegetation	<input type="checkbox"/> Scouring
		<input type="checkbox"/> Abrupt plant community change	<input type="checkbox"/> Water staining
Width of Waterbody - Top of Bank to Top of Bank: 4 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 2 ft.	Width of Waterbody - Water Edge to Water Edge: 3 ft.	Depth of Water: (Approx.) 0.5 ft.
Sinuosity: (check one) <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: (Approx.) 0 fps	Bank height Right: 2 ft. Left: 3 ft.	Bank slope Right: 90 degrees Left: 90 degrees
Qualitative Attributes			
Water Appearance: (check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: (check all that apply)			
% of Substrate: <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:			
70 % 30 % _____ % _____ %			
Width of Riparian Zone: 20 ft.	Vegetative Layers: (check all that apply)		
N/A <input type="checkbox"/>	<input checked="" type="checkbox"/> Trees: 9 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 2 in. <input checked="" type="checkbox"/> Herbs: NA in.		
Dominant Bank Vegetation (list): Clethra alnifolia, Liquidambar styraciflua, Arundinaria gigantea			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): leaf packs			
Aquatic Organisms Observed (list): none observed			
T&E Species Observed (list): none observed			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): ditch between homes and powerline ROW			
Tributary is: (check one) <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality*: (check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

scho014

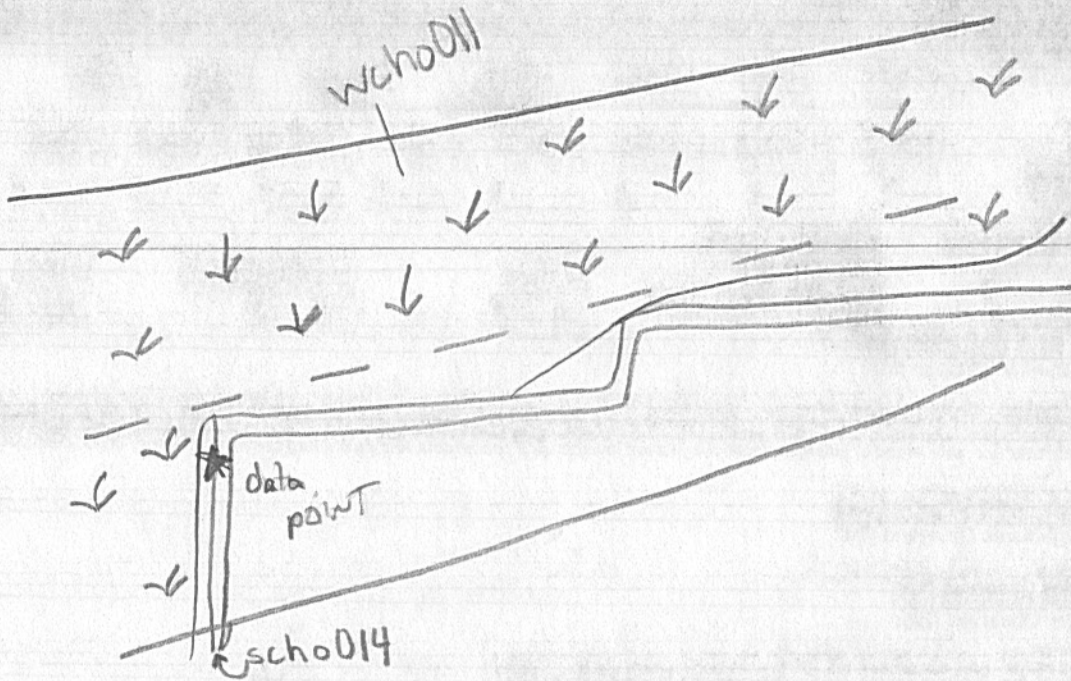
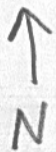
▪ **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody data point scho014 facing north upstream.



Waterbody data point scho014 facing south downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody data point scho014 facing east across.

Linear Waterbody Data Sheet

Survey Description					
Project Name: ACP		Waterbody Name: LNT to Deep Creek		Waterbody ID: Scho005	Date: 10/16/15
State: VA	County/Parish: Chesapeake	Company: ESI	Crew Member Initials: K.M, C.I.	Photos: W, E, N	
Tract Number(s): 27-051		Nearest Milepost: 75.3	Associated Wetland ID(s): N/A		
Survey Type: <small>(check one)</small> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:					
Physical Attributes					
Stream Classification: <small>(check one)</small> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial					
Waterbody Type: <small>(check one)</small> <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:					
OHWM Width: 6 ft.	OHWM Height: 0.1 ft.	OHWM Indicator: <small>(check all that apply)</small>	<input type="checkbox"/> Clear line on bank	<input checked="" type="checkbox"/> Shelving	<input type="checkbox"/> Wrested vegetation
N/A <input type="checkbox"/>	<input type="checkbox"/> Bent, matted, or missing vegetation	<input checked="" type="checkbox"/> Wrack line	<input type="checkbox"/> Litter and debris	<input type="checkbox"/> Abrupt plant community change	<input type="checkbox"/> Scouring
<input type="checkbox"/> Water staining	<input type="checkbox"/> Soil characteristic change	<input type="checkbox"/> Abrupt plant community change	<input type="checkbox"/> Soil characteristic change	<input type="checkbox"/> Soil characteristic change	<input type="checkbox"/> Soil characteristic change
Width of Waterbody - Top of Bank to Top of Bank: 14 ft.		Width of Waterbody - Toe of Slope to Toe of Slope: 6 ft.		Width of Waterbody - Water Edge to Water Edge: 6 ft.	Depth of Water: <small>(Approx.)</small> 0.1 ft.
N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>
Sinuosity: <small>(check one)</small> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <small>(Approx.)</small> <1 fps		Bank height Right: 3 ft. Left: 5 ft.	Bank slope Right: 45 degrees Left: 90 degrees
N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>
Qualitative Attributes					
Water Appearance: <small>(check one)</small> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:					
Substrate: <small>(check all that apply)</small> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:					
% of Substrate: _____% _____% _____% _____% 5% 95% _____% _____%					
Width of Riparian Zone: N/A <input type="checkbox"/>		Vegetative Layers: <small>(check all that apply)</small> <input type="checkbox"/> Trees: _____ in. <input checked="" type="checkbox"/> Saplings/Shrubs: 2 in. <input checked="" type="checkbox"/> Herbs: N/A in.			
N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>
Dominant Bank Vegetation (list): Morella cerifera, Acer rubrum, Prunus serotina, mowed grasses.					
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): emerged aquatic vegetation					
Aquatic Organisms Observed (list): Mosquitofish					
T&E Species Observed (list): N/A					
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Artificial man-made ditch					
Tributary Is: <small>(check one)</small> <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated					
Stream Quality *: <small>(check one)</small> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low					

Waterbody ID:

Scho005

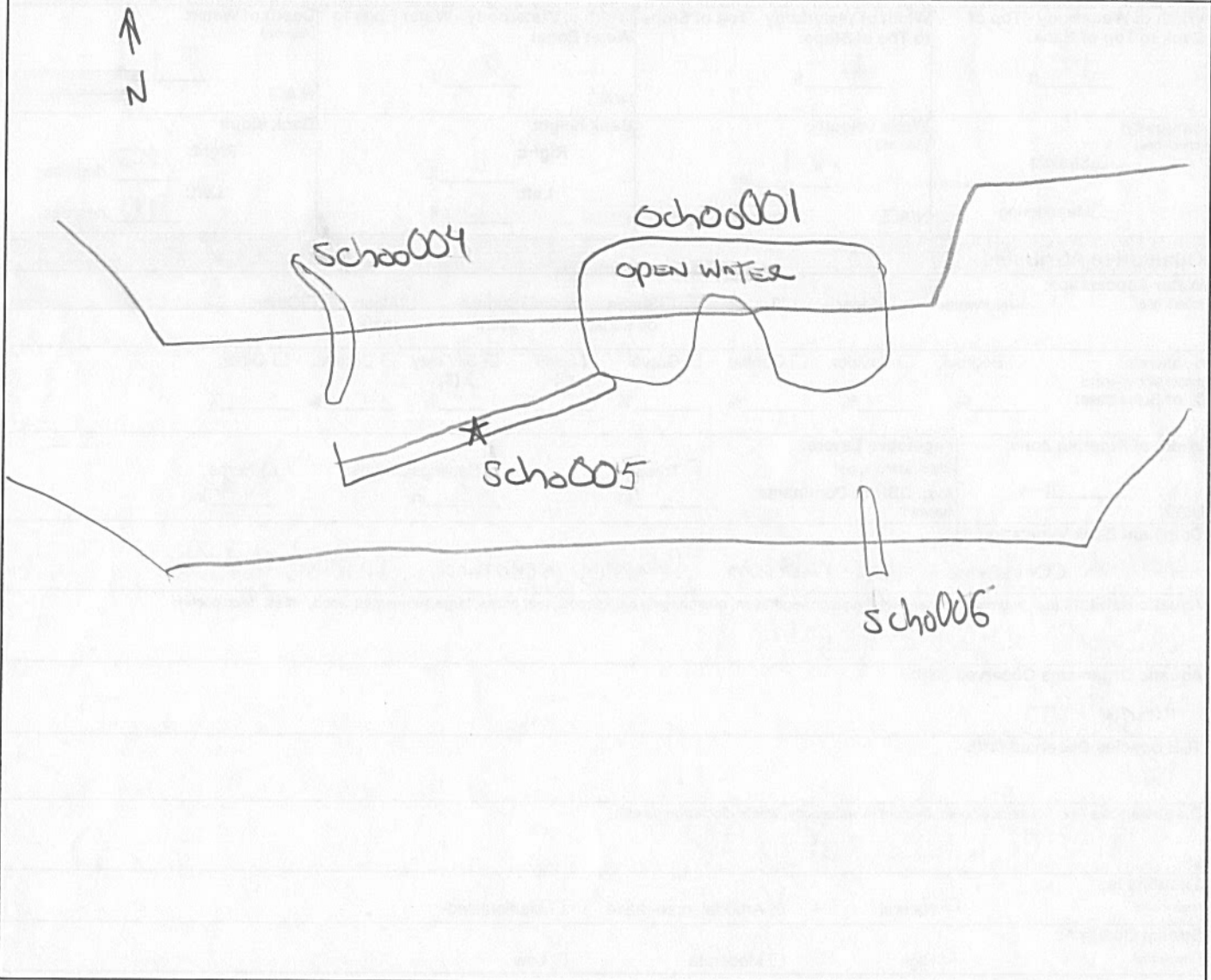
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody scho005 facing west upstream.



Waterbody scho005 facing east downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody scho005 facing north across bank.

Open Waterbody Data Sheet

Survey Description			
Project Name: ACP	Waterbody Name: UNNAMED POND	Waterbody ID: 0cho001	Date: 10/15/15
State: VA	County: chesapeake	Company: ESTJ	Crew Member Initials: K-M, S.I
Photos: NW, NE	Tract Number(s): 27-051	Nearest Milepost: 75.3	Associated Wetland ID(s): NA
Survey Type: (check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Waterbody Type: (check one) <input type="checkbox"/> Stock Pond <input type="checkbox"/> Natural Pond <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input type="checkbox"/> Impoundment <input type="checkbox"/> Oxbow <input checked="" type="checkbox"/> Other: stormwater pond			
Hydrologic Regime: <input checked="" type="checkbox"/> Permanently Flooded <input type="checkbox"/> Semipermanently Flooded <input type="checkbox"/> Seasonally Flooded <input type="checkbox"/> Temporarily Flooded			
OHWM Height: N/A ft.		OHWM Indicator: (check all that apply) <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Depth of Water: N/A <input type="checkbox"/> >3 ft.		Bank height (average): N/A ft.	Bank slope (average): 45 degrees
Qualitative Attributes			
Water Appearance: (check one) <input type="checkbox"/> No water <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: (check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input checked="" type="checkbox"/> Other: N/A			
% of Substrate: _____% _____% _____% _____% _____% _____% _____%			
Width of Riparian Zone: N/A <input checked="" type="checkbox"/> ft.		Vegetative Layers: (check all that apply) <input type="checkbox"/> Trees: <input type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs: N/A	
Avg. DBH of Dominants: (approx.) N/A		_____ in. _____ in. _____ in.	
Dominant Bank Vegetation (list): Salix nigra, Morella cerifera, Baccharis halimifolia, Lespedeza cuneata			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools, etc.): deep water, overhanging vegetation, emergent fringe			
Aquatic Organisms Observed (list): fish			
T&E Species Observed (list): N/A			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Man made storm water pond			
Waterbody is: (check one) <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Waterbody Quality *: (check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low			

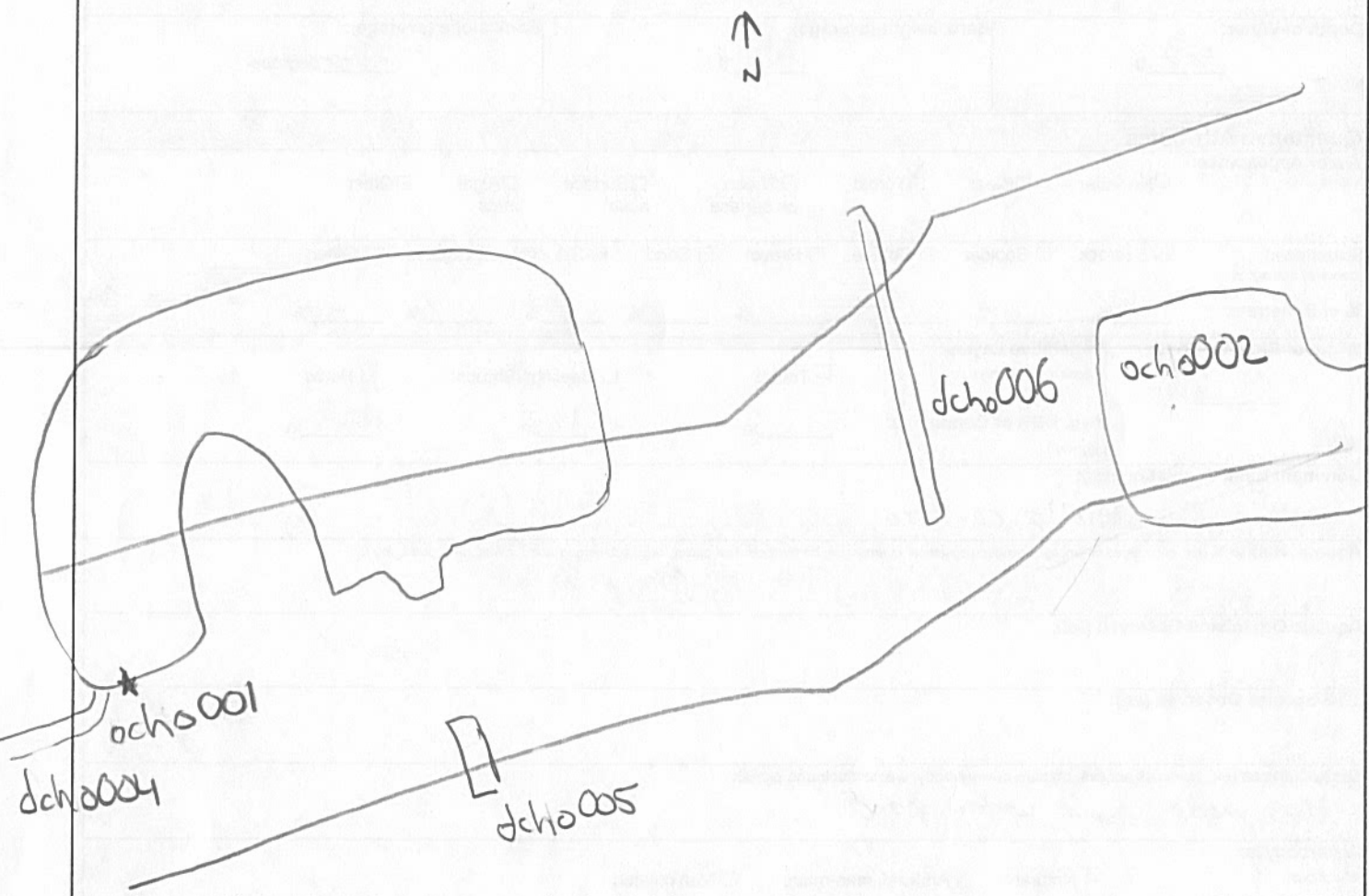
Waterbody ID:

och001

- **High Quality:** Natural, natural bank vegetation around entire waterbody; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.
- Moderate Quality:** Altered by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.
- Low Quality:** Rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point locations, survey boundary, and IDs of associated features)



Environmental Field Surveys
Open Water Point Photo Page



Open Waterbody ocho001 facing northwest.



Open Waterbody ocho001 facing northeast.

Environmental Field Surveys
Waterbody Photo Page



Waterbody dcho006 facing north upstream.



Waterbody dcho006 facing south downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody dcho006 facing east across bank.

Open Waterbody Data Sheet

Survey Description				
Project Name: ACP	Waterbody Name: UNNAMED Pond	Waterbody ID: 0cho002	Date: 10/19/15	
State: VA	County: Chesapeake	Company: ESI	Crew Member Initials: K.M, S.I	Photos: NE, NW
Tract Number(s): 27-055	Nearest Milepost: T9.6	Associated Wetland ID(s): N/A		
Survey Type: (check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Waterbody Type: (check one) <input type="checkbox"/> Stock Pond <input type="checkbox"/> Natural Pond <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input type="checkbox"/> Impoundment <input type="checkbox"/> Oxbow <input checked="" type="checkbox"/> Other: stormwater pond				
Hydrologic Regime: <input checked="" type="checkbox"/> Permanently Flooded <input type="checkbox"/> Semipermanently Flooded <input type="checkbox"/> Seasonally Flooded <input type="checkbox"/> Temporarily Flooded				
OHWM Height: N/A ft.	OHWM Indicator: (check all that apply) <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change			
Depth of Water: N/A <input type="checkbox"/> > 3 ft.	Bank height (average): N/A ft.	Bank slope (average): 45 degrees		
Qualitative Attributes				
Water Appearance: (check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: (check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other: % of Substrate: _____ % _____ % _____ % _____ % _____ % _____ % _____ % N/A				
Width of Riparian Zone: N/A <input checked="" type="checkbox"/> _____ ft.	Vegetative Layers: (check all that apply) <input type="checkbox"/> Trees: _____ <input type="checkbox"/> Saplings/Shrubs: _____ <input checked="" type="checkbox"/> Herbs: N/A in. Avg. DBH of Dominants: (approx.) _____ in. _____ in.			
Dominant Bank Vegetation (list): Mowed and maintained lawn grasses and herbs.				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools, etc.): Deep water				
Aquatic Organisms Observed (list): Paper pondshell, largemouth bass, bluegill, mosquitofish				
T&E Species Observed (list): None				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Man made storm water pond				
Waterbody is: (check one) <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Waterbody Quality * : (check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:

ocho002

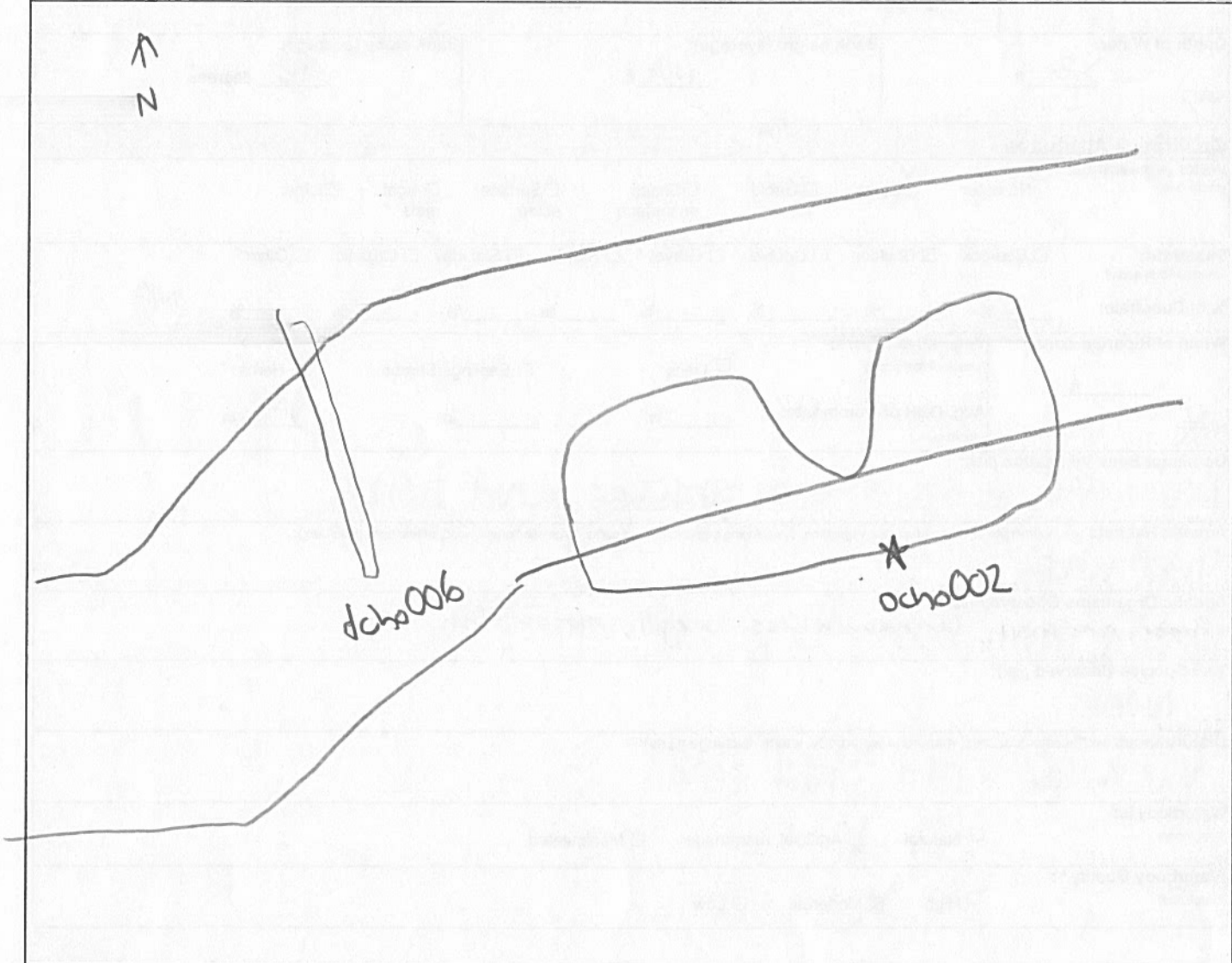
▪ **High Quality:** Natural, natural bank vegetation around entire waterbody; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point locations, survey boundary, and IDs of associated features)



Environmental Field Surveys
Open Water Point Photo Page



Open Waterbody ocho002 facing northeast.



Open Waterbody ocho002 facing northwest.

Open Waterbody Data Sheet

Survey Description			
Project Name: ACP	Waterbody Name: POND	Waterbody ID: OCHO003	Date: 10/20/15
State: VA	County: Chesapeake	Company: ESI	Crew Member Initials: L.R., S.I
Photos: SE, SW			
Tract Number(s): 27-116, 27-117		Nearest Milepost: 76.3	Associated Wetland ID(s): N/A
Survey Type: (check one) <input checked="" type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Waterbody Type: (check one) <input checked="" type="checkbox"/> Stock Pond <input type="checkbox"/> Natural Pond <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input type="checkbox"/> Impoundment <input type="checkbox"/> Oxbow <input type="checkbox"/> Other:			
Hydrologic Regime: <input checked="" type="checkbox"/> Permanently Flooded <input type="checkbox"/> Semipermanently Flooded <input type="checkbox"/> Seasonally Flooded <input type="checkbox"/> Temporarily Flooded			
OHWM Height: 1 ft.		OHWM Indicator: (check all that apply) <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Depth of Water: N/A <input type="checkbox"/> > 2 ft.	Bank height (average): 3 ft.	Bank slope (average): 45 degrees	
Qualitative Attributes			
Water Appearance: (check one) <input type="checkbox"/> No water <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: (check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate: _____% _____% _____% _____% 85% 15% _____% _____%			
Width of Riparian Zone: N/A <input checked="" type="checkbox"/> _____ ft.	Vegetative Layers: (check all that apply) <input type="checkbox"/> Trees: _____ <input type="checkbox"/> Saplings/Shrubs: _____ <input checked="" type="checkbox"/> Herbs: N/A in.		
Avg. DBH of Dominants: (approx.) _____ in. _____ in. _____ in.			
Dominant Bank Vegetation (list): Liquidambar styraciflua, Andropogon virginicus, mowed/maintained grass/herbs			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools, etc.): Deep standing water			
Aquatic Organisms Observed (list): None			
T&E Species Observed (list): None			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Artificial stormwater retention pond.			
Waterbody is: (check one) <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Waterbody Quality *: (check one) <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			

Waterbody ID:

ocho003

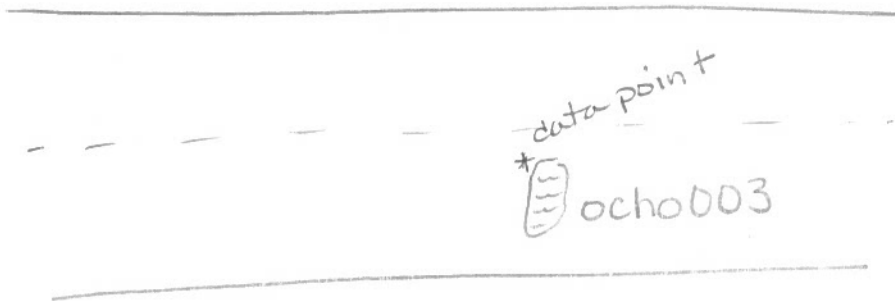
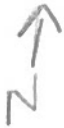
▪ **High Quality:** Natural, natural bank vegetation around entire waterbody; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point locations, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody ocho003 facing southeast.



Waterbody ocho003 facing southwest.

Linear Waterbody Data Sheet

Survey Description				
Project Name: <u>ACP</u>	Waterbody Name: <u>LWT to Deep Creek</u>	Waterbody ID: <u>SchODIZ</u>	Date: <u>12/15/15</u>	
State: <u>VA</u>	County/Parish: <u>Chesapeake</u>	Company: <u>ESI</u>	Crew Member Initials: <u>RT, LR</u>	Photos: <u>W, E, S</u>
Tract Number(s): <u>27-177</u>		Nearest Milepost: <u>81.0</u>	Associated Wetland ID(s): <u>NA</u>	
Survey Type: <small>(check one)</small> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <small>(check one)</small> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial				
Waterbody Type: <small>(check one)</small> <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>3</u> ft.	OHWM Indicator: <small>(check all that apply)</small>	<input checked="" type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving	<input type="checkbox"/> Wrested vegetation
OHWM Height: <u>1</u> ft.	<input type="checkbox"/> Bent, matted, or missing vegetation	<input type="checkbox"/> Wrack line	<input type="checkbox"/> Litter and debris	<input type="checkbox"/> Abrupt plant community change
N/A <input type="checkbox"/>				<input checked="" type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining
Width of Waterbody - Top of Bank to Top of Bank: <u>5</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>2</u> ft.	Width of Waterbody - Water Edge to Water Edge: <u>2</u> ft.	Depth of Water: <small>(Approx.)</small> <u>1</u> ft.	
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	
Sinuosity: <small>(check one)</small> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <small>(Approx.)</small> <u>0</u> fps	Bank height Right: <u>2</u> ft. Left: <u>2</u> ft.	Bank slope Right: <u>80</u> degrees Left: <u>80</u> degrees	
N/A <input type="checkbox"/>	N/A <input type="checkbox"/>			
Qualitative Attributes				
Water Appearance: <small>(check one)</small> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <small>(check all that apply)</small> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:				
% of Substrate: _____% _____% _____% _____% <u>30</u> % <u>70</u> % _____% _____%				
Width of Riparian Zone: <u>20</u> ft.	Vegetative Layers: <small>(check all that apply)</small>	<input checked="" type="checkbox"/> Trees:	<input checked="" type="checkbox"/> Saplings/Shrubs:	<input checked="" type="checkbox"/> Herbs
N/A <input type="checkbox"/>	Avg. DBH of Dominants: <small>(approx.)</small> <u>7</u> in.	<u>7</u> in.	<u>1</u> in.	<u>NA</u> in.
Dominant Bank Vegetation (list): <u>Juncus effusus, Liquidambar styraciflua, Morella cerifera</u>				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): <u>leaf packs</u>				
Aquatic Organisms Observed (list): <u>none</u>				
T&E Species Observed (list): <u>none</u>				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): <u>power line easement, roadside ditch</u>				
Tributary is: <small>(check one)</small> <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality *: <small>(check one)</small> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low				

Waterbody ID:

schoD12

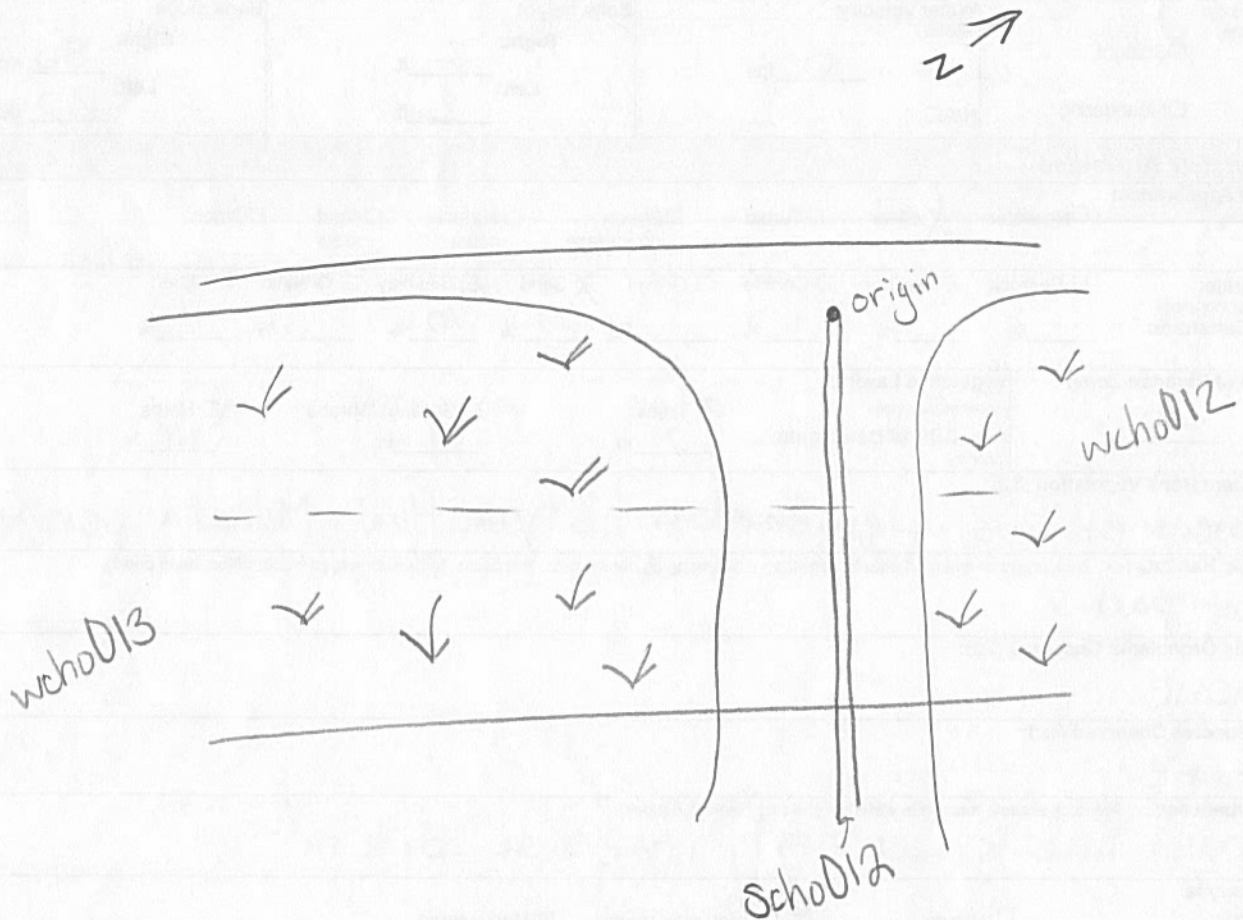
• **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody scho012 facing west upstream.



Waterbody scho012 facing east downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody scho012 facing south across bank.

Open Waterbody Data Sheet

Survey Description				
Project Name: <u>ACP</u>		Waterbody Name: <u>UNNAMED POND</u>		Waterbody ID: <u>0cho005</u>
Date: <u>12/15/15</u>				
State: <u>VA</u>	County: <u>Chesapeake</u>	Company: <u>ESI</u>	Crew Member Initials: <u>LR, RT</u>	Photos: <u>SESW</u>
Tract Number(s): <u>27-177</u>		Nearest Milepost: <u>81.2</u>	Associated Wetland ID(s): <u>NA</u>	
Survey Type: <small>(check one)</small>				
<input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Waterbody Type: <small>(check one)</small>				
<input checked="" type="checkbox"/> Stock Pond <input type="checkbox"/> Natural Pond <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input type="checkbox"/> Impoundment <input type="checkbox"/> Oxbow <input type="checkbox"/> Other:				
Hydrologic Regime:				
<input checked="" type="checkbox"/> Permanently Flooded <input type="checkbox"/> Semipermanently Flooded <input type="checkbox"/> Seasonally Flooded <input type="checkbox"/> Temporarily Flooded				
OHWM Height: <u>>3</u> ft.		OHWM Indicator: <small>(check all that apply)</small>		
		<input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining		
		<input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input checked="" type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
Depth of Water: N/A <input type="checkbox"/> <u>UNK</u> ft.		Bank height (average): <u>4</u> ft.		Bank slope (average): <u>60</u> degrees
Qualitative Attributes				
Water Appearance: <small>(check one)</small>				
<input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <small>(check all that apply)</small>				
<input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other: <u>UNK</u>				
% of Substrate: _____% _____% _____% _____% _____% _____% _____%				
Width of Riparian Zone: _____ ft.		Vegetative Layers: <small>(check all that apply)</small>		
N/A <input checked="" type="checkbox"/>		<input type="checkbox"/> Trees: <input type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs		
		Avg. DBH of Dominants: _____ in. _____ in. <u>NA</u> in.		
Dominant Bank Vegetation (list): <u>mowed grasses</u>				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools, etc.): <u>none observed</u>				
Aquatic Organisms Observed (list): <u>none observed</u>				
T&E Species Observed (list): <u>none observed</u>				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): <u>pond inside fence at power plant</u>				
Waterbody is: <small>(check one)</small>				
<input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Waterbody Quality*: <small>(check one)</small>				
<input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low				

Waterbody ID:

ocho005

High Quality: Natural, natural bank vegetation around entire waterbody; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

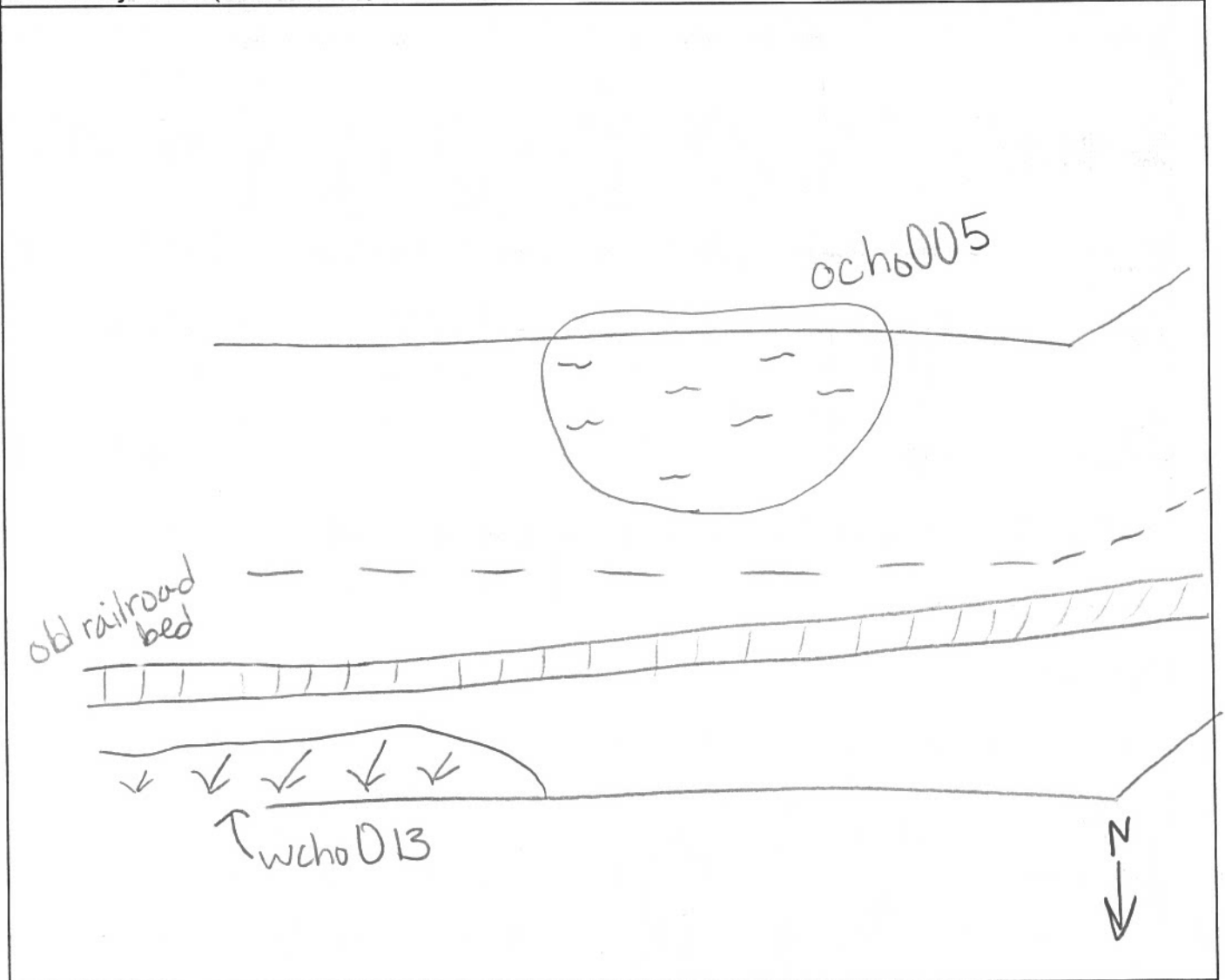
Moderate Quality: Altered by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

could not GPS waterbody. could not cross fence at power plant

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point locations, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody ocho005 facing southeast.



Waterbody ocho005 facing southwest.

Open Waterbody Data Sheet

Survey Description				
Project Name: ACP	Waterbody Name: UNNAMED Pond	Waterbody ID: ocho004	Date: 12/15/15	
State: VA	County: Chesapeake	Company: ESI	Crew Member Initials: LR, RT	Photos: N, NE
Tract Number(s): 27-177		Nearest Milepost: 81.6	Associated Wetland ID(s): NA	
Survey Type: (check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Waterbody Type: (check one) <input checked="" type="checkbox"/> Stock Pond <input type="checkbox"/> Natural Pond <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input type="checkbox"/> Impoundment <input type="checkbox"/> Oxbow <input type="checkbox"/> Other:				
Hydrologic Regime: <input checked="" type="checkbox"/> Permanently Flooded <input type="checkbox"/> Semipermanently Flooded <input type="checkbox"/> Seasonally Flooded <input type="checkbox"/> Temporarily Flooded				
OHWM Height: 1 ft.	OHWM Indicator: (check all that apply) <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change			
Depth of Water: 2 ft.	Bank height (average): 4 ft.	Bank slope (average): 45 degrees		
Qualitative Attributes				
Water Appearance: (check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: (check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:				
% of Substrate: _____% _____% _____% _____% 70% 30% _____% _____%				
Width of Riparian Zone: N/A	Vegetative Layers: (check all that apply) <input type="checkbox"/> Trees: <input type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs Avg. DBH of Dominants: (approx.) _____ in. _____ in. NA in.			
Dominant Bank Vegetation (list): Phragmites australis, mowed grasses				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools, etc.): none observed				
Aquatic Organisms Observed (list): none observed				
T&E Species Observed (list): none observed				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): pond on power plant near old railroad bed				
Waterbody is: (check one) <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Waterbody Quality*: (check one) <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low				

Waterbody ID:

0cho004

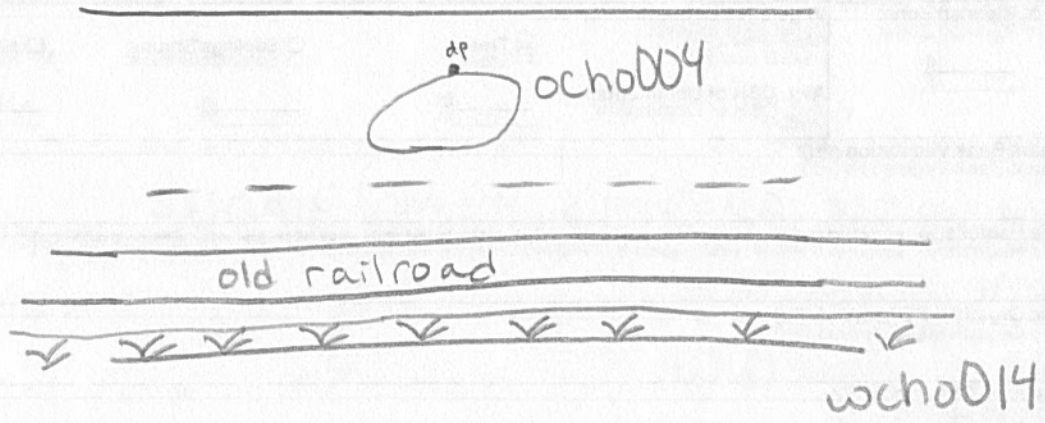
▪ **High Quality:** Natural, natural bank vegetation around entire waterbody; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point locations, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody ocho004 facing north.



Waterbody ocho004 facing northeast.

Linear Waterbody Data Sheet

Survey Description			
Project Name: ACP	Waterbody Name: South Branch of Elizabeth River	Waterbody ID: schp 001	Date: 12/11/15
State: VA	County/Parish: Chesapeake	Company: ESI	Crew Member Initials: MKS, KSM Photos: facing W, E, N
Tract Number(s): 27-001-B212, 27-005RR, 27-177	Nearest Milepost: 81.9	Associated Wetland ID(s): NA	
Survey Type: (check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: (check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial			
Waterbody Type: (check one) <input checked="" type="checkbox"/> River <input type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: 840 ft. Height: 30 ft. N/A <input type="checkbox"/>	OHWM Indicator: (check all that apply) <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: 850 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 800 ft. (approx)	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> 840 ft.	Depth of Water: (Approx.) 30 ft. N/A <input type="checkbox"/>
Sinuosity: (check one) <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: (Approx.) 0.5 fps N/A <input type="checkbox"/>	Bank height Right: 6* ft. *above water level Left: 6* ft.	Bank slope Right: 45 degrees Left: 90 degrees
Qualitative Attributes			
Water Appearance: (check one) <input type="checkbox"/> No water <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: (check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other: undetermined - too deep to check.			
% of Substrate: _____ %	_____ %	_____ %	_____ %
Width of Riparian Zone: >1000 ft. N/A <input type="checkbox"/>	Vegetative Layers: (check all that apply) <input type="checkbox"/> Trees: _____ in. <input type="checkbox"/> Saplings/Shrubs: _____ in. <input type="checkbox"/> Herbs: _____ in. Avg. DBH of Dominants: _____ in.		
Dominant Bank Vegetation (list): none present, bulk-headed			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): wooden structures (bulkhead)			
Aquatic Organisms Observed (list): fish			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): dredging, hardened shoreline			
Tributary is: (check one) <input type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input checked="" type="checkbox"/> Manipulated			
Stream Quality *: (check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

schp001

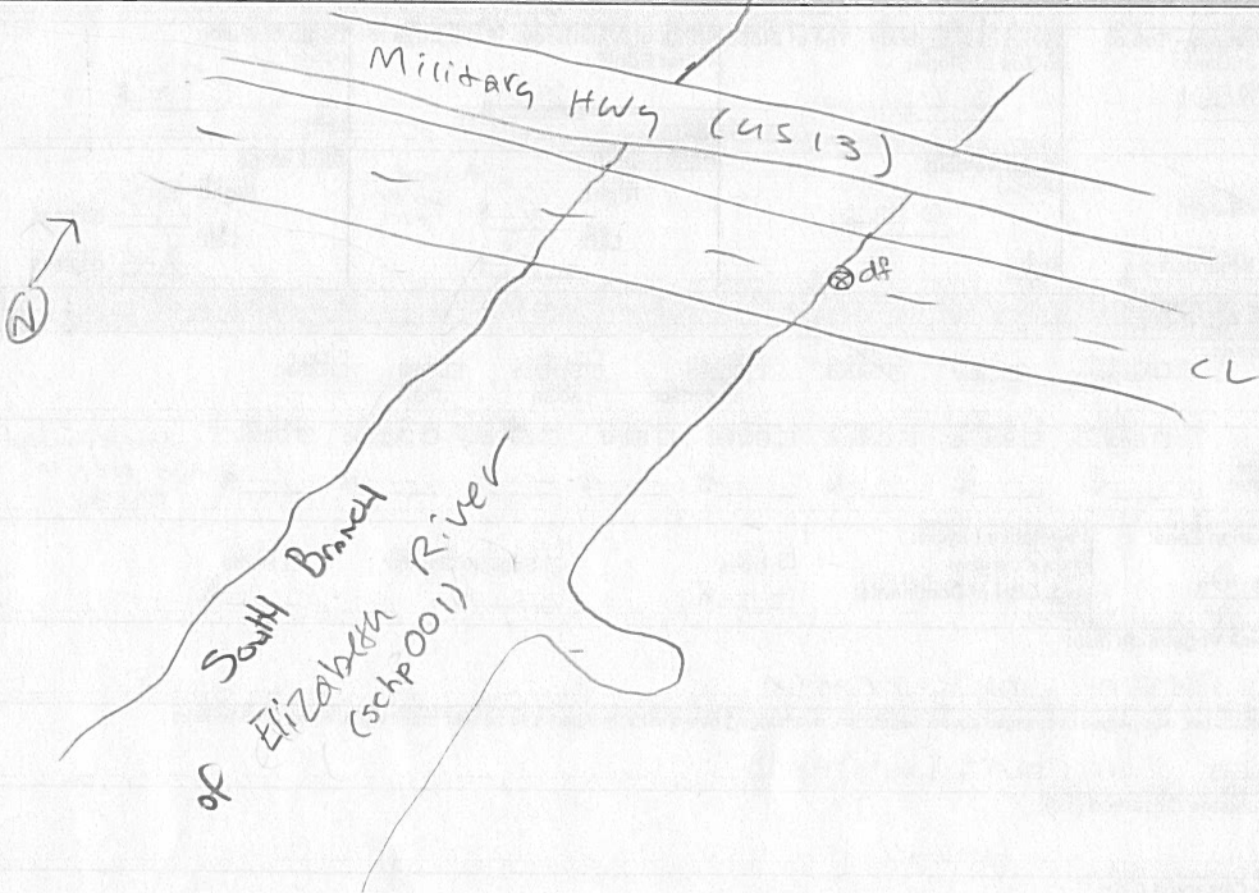
• **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody data point schp001 facing west upstream.



Waterbody data point schp001 facing east downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody data point schp001 facing north across bank.

Linear Waterbody Data Sheet

Survey Description					
Project Name: ACP		Waterbody Name: 4NT to South Branch Elizabeth River		Waterbody ID: schp 009	Date: 12/4/15
State: VA	County/Parish: Chesapeake	Company: EST-1	Crew Member Initials: MKS, KSM	Photos: Facing SE, W, NE	
Tract Number(s): 27-005-RR, 27-001-B212		Nearest Milepost: NA		Associated Wetland ID(s): NA	
Survey Type: (check one) <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:					
Physical Attributes					
Stream Classification: (check one) <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial					
Waterbody Type: (check one) <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:					
OHWM Width: 6 ft.	OHWM Indicator: (check all that apply)	<input checked="" type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving	<input checked="" type="checkbox"/> Wrested vegetation	<input type="checkbox"/> Scouring
OHWM Height: 1 ft.	<input type="checkbox"/> Bent, matted, or missing vegetation	<input type="checkbox"/> Wrack line	<input type="checkbox"/> Litter and debris	<input type="checkbox"/> Abrupt plant community change	<input checked="" type="checkbox"/> Water staining
N/A <input type="checkbox"/>					
Width of Waterbody - Top of Bank to Top of Bank: 12 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 6 ft.	Width of Waterbody - Water Edge to Water Edge: 6 ft.	Depth of Water: (Approx.) 1 ft.	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>
Sinuosity: (check one) <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Water velocity: (Approx.) N/A <input checked="" type="checkbox"/> < 1 fps	Bank height Right: 3 ft. Left: 3 ft.	Bank slope Right: 45 degrees Left: 45 degrees		
Qualitative Attributes					
Water Appearance: (check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:					
Substrate: (check all that apply)					
% of Substrate:	Bedrock	Boulder	Cobble	Gravel	Sand
	%	%	%	%	10%
					90%
Width of Riparian Zone: 50 ft.	Vegetative Layers: (check all that apply)	<input type="checkbox"/> Trees:	<input type="checkbox"/> Saplings/Shrubs:	<input checked="" type="checkbox"/> Herbs	N/A in.
N/A <input type="checkbox"/>	Avg. DBH of Dominants: (approx.)	in.	in.		
Dominant Bank Vegetation (list): Phragmites australis, Aster sp. (mowed)					
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): none					
Aquatic Organisms Observed (list): none observed					
T&E Species Observed (list): none observed					
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Discharge pipe					
Tributary is: (check one) <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated					
Stream Quality*: (check one) <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low					

Waterbody ID:

Schp004

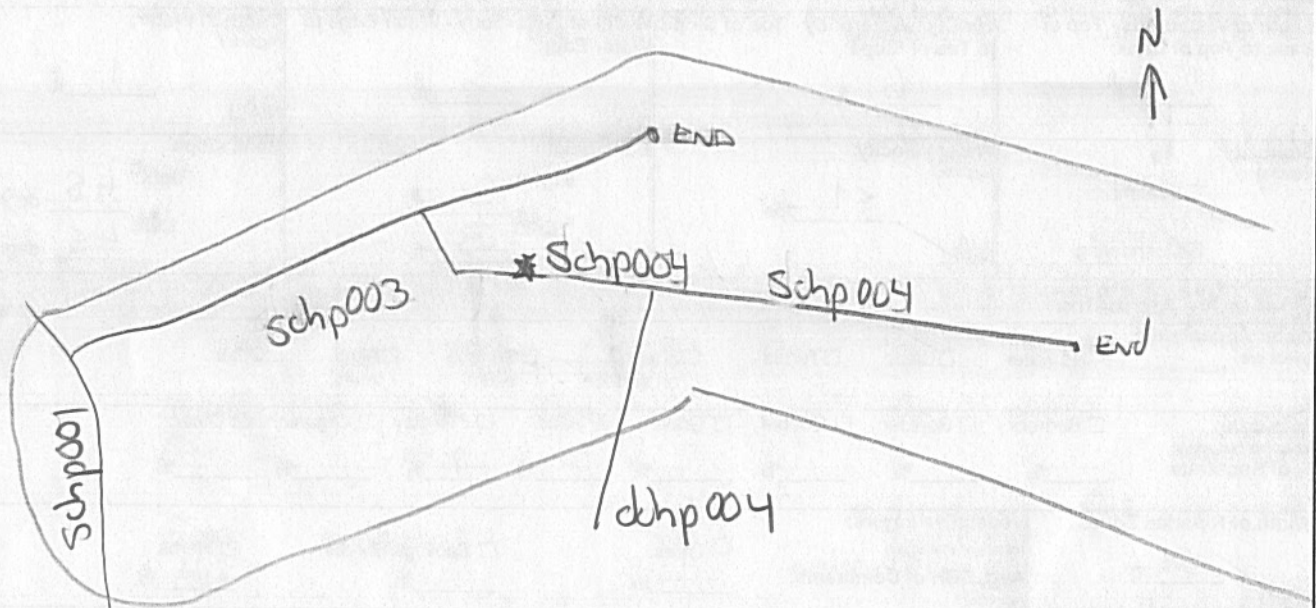
▪ **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



East
Bank
of
South
Branch
Elizabeth
River

Environmental Field Surveys
Waterbody Photo Page



Waterbody data point schp004 facing southeast upstream.



Waterbody data point schp004 facing west downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody data point schp004 facing northeast across bank.

Environmental Field Surveys
Waterbody Photo Page



Waterbody dchr008 facing northeast upstream.



Waterbody dchr008 facing southwest downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody dchr008 facing southeast across bank.

Linear Waterbody Data Sheet

Survey Description

Project Name: ALP Waterbody Name: UNT to Great Dismal Ditch Swamp Waterbody ID: Schr007 p and e Date: 14 Jan 2016

State: VA County/Parish: Chesapeake Company: ESI Crew Member Initials: CAS CSM Photos: NW, NE, SE

Tract Number(s): 27-001-B211 Nearest Milepost: 82.4 Associated Wetland ID(s): wchb001

Survey Type: (check one) Centerline Re-Route Access Road Other:

Physical Attributes

Stream Classification: (check one) Ephemeral Intermittent Perennial

Waterbody Type: (check one) River Stream Ditch Canal Other:

OHWM Width: 5 ft. Height: 0.5 ft. N/A
 OHWM Indicator: (check all that apply) Clear line on bank Shelving Wrested vegetation Scouring Water staining
 Bent, matted, or missing vegetation Wrack line Litter and debris Abrupt plant community change Soil characteristic change

Width of Waterbody - Top of Bank to Top of Bank: 6 ft.
 Width of Waterbody - Toe of Slope to Toe of Slope: 5 ft.
 Width of Waterbody - Water Edge to Water Edge: 5 ft. N/A
 Depth of Water: (Approx.) 0.5 ft. N/A

Sinuosity: (check one) Straight Meandering
 Water velocity: (Approx.) 1 fps N/A
 Bank height Right: 0.5 ft. Left: 0.5 ft.
 Bank slope Right: 45 degrees Left: 60 degrees

Qualitative Attributes

Water Appearance: (check one) No water Clear Turbid Sheen on surface Surface scum Algal mats Other:

Substrate: (check all that apply) Bedrock Boulder Cobble Gravel Sand Silt/clay Organic Other:
 % of Substrate: _____% _____% _____% _____% 20% 60% 20% _____%

Width of Riparian Zone: 8 ft. N/A
 Vegetative Layers: (check all that apply) Trees: _____ in. Saplings/Shrubs: _____ in. Herbs N/A in.
 Avg. DBH of Dominants: _____ in.

Dominant Bank Vegetation (list): Phragmites australis, Typha latifolia

Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): None

Aquatic Organisms Observed (list): None

T&E Species Observed (list): None

Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Road

Tributary is: (check one) Natural Artificial, man-made Manipulated

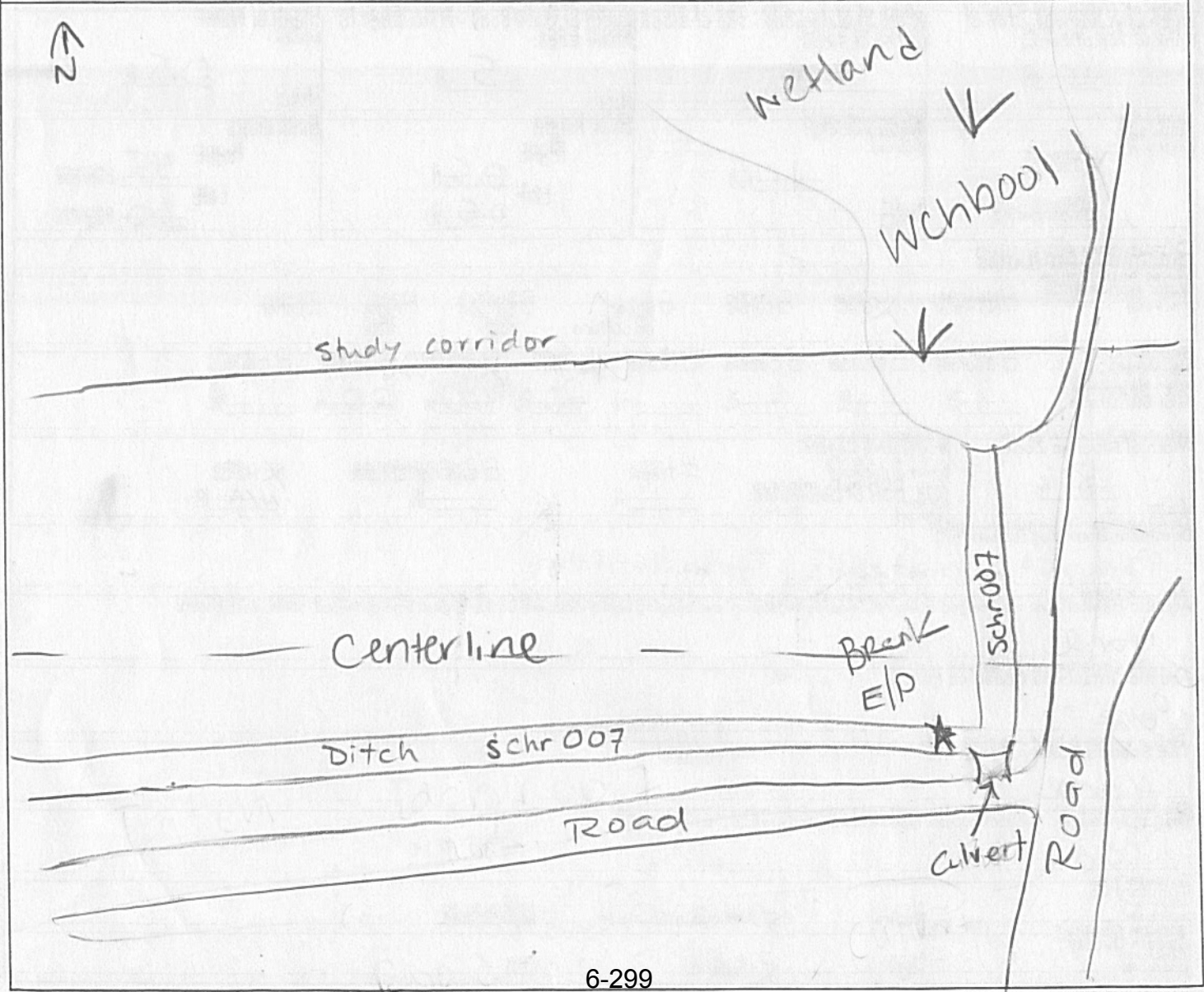
Stream Quality *: (check one) High Moderate 6-298 Low

Waterbody ID:
Schr007

- **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.
- Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.
- Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody schr007 facing northwest upstream.



Waterbody schr007 facing northeast downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody schr007 facing southeast across bank.



Ditch data point DCHB001 facing east

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Atlantic Coast Pipeline City/County: Suffolk Sampling Date: 12/8/2014
 Applicant/Owner: Dominion State: VA Sampling Point: wsua006f_w
 Investigator(s): GB, RL Section, Township, Range: No PLSS in this area
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): microtopography Slope (%): 0
 Subregion (LRR or MLRA): T Lat: 36.63087967 Long: -76.89024724 Datum: WGS 1984
 Soil Map Unit Name: Nansemond loamy fine sand, 6 to 15 percent slopes NWI classification: PFO1E, R2UBH

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Semi-permanently flooded PFO wetland located on the eastern floodplain of the Blackwater River; eastern extent is a well-defined terrace 20 feet above floodplain. There is no natural levee present on the eastern side of river, so OHWM is the western boundary of wetland.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>1</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: wsua006f_w

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Nyssa aquatica</u>	50	Yes	OBL	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. <u>Taxodium distichum</u>	25	Yes	OBL															
3. <u>Fraxinus pennsylvanica</u>	5	No	FACW															
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
_____ = Total Cover 50% of total cover: <u>40</u> 20% of total cover: <u>16</u>				Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:right;">Total % Cover of:</td> <td style="width:50%; text-align:right;">Multiply by:</td> </tr> <tr> <td>OBL species <u>80</u></td> <td>x 1 = <u>80</u></td> </tr> <tr> <td>FACW species <u>16</u></td> <td>x 2 = <u>32</u></td> </tr> <tr> <td>FAC species <u>9</u></td> <td>x 3 = <u>27</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>139</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.32</u>	Total % Cover of:	Multiply by:	OBL species <u>80</u>	x 1 = <u>80</u>	FACW species <u>16</u>	x 2 = <u>32</u>	FAC species <u>9</u>	x 3 = <u>27</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>105</u> (A)	<u>139</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>80</u>	x 1 = <u>80</u>																	
FACW species <u>16</u>	x 2 = <u>32</u>																	
FAC species <u>9</u>	x 3 = <u>27</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>105</u> (A)	<u>139</u> (B)																	
_____ = Total Cover 50% of total cover: <u>10</u> 20% of total cover: <u>4</u>																		
Sapling/Shrub Stratum (Plot size: <u>15</u>)																		
1. <u>Fraxinus pennsylvanica</u>	5	Yes	FACW															
2. <u>Nyssa aquatica</u>	5	Yes	OBL															
3. <u>Itea virginica</u>	4	Yes	FACW															
4. <u>Carpinus caroliniana</u>	3	No	FAC															
5. <u>Acer rubrum</u>	3	No	FAC															
6. _____																		
7. _____																		
8. _____																		
_____ = Total Cover 50% of total cover: <u>10</u> 20% of total cover: <u>4</u>																		
Herb Stratum (Plot size: <u>5</u>)																		
1. _____																		
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
12. _____																		
_____ = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																		
1. <u>Smilax rotundifolia</u>	3	Yes	FAC															
2. <u>Decumaria barbara</u>	2	Yes	FACW															
3. _____																		
4. _____																		
5. _____																		
_____ = Total Cover 50% of total cover: <u>2.5</u> 20% of total cover: <u>1</u>																		
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																		
1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																		
Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.																		
Remarks: (If observed, list morphological adaptations below).																		

SOIL

Sampling Point: wsua006f_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 2/2	100					SIL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) **(LRR P, T, U)**
- 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- Muck Presence (A8) **(LRR U)**
- 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) **(MLRA 150A)**
- Sandy Mucky Mineral (S1) **(LRR O, S)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) **(LRR P, S, T, U)**

- Polyvalue Below Surface (S8) **(LRR S, T, U)**
- Thin Dark Surface (S9) **(LRR S, T, U)**
- Loamy Mucky Mineral (F1) **(LRR O)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR U)**
- Depleted Ochric (F11) **(MLRA 151)**
- Iron-Manganese Masses (F12) **(LRR O, P, T)**
- Umbric Surface (F13) **(LRR P, T, U)**
- Delta Ochric (F17) **(MLRA 151)**
- Reduced Vertic (F18) **(MLRA 150A, 150B)**
- Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR O)**
- 2 cm Muck (A10) **(LRR S)**
- Reduced Vertic (F18) **(outside MLRA 150A,B)**
- Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:



Photo 1
Wetland data point wsua006f_w facing south



Photo 2
Wetland data point wsua006f_w facing west

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Atlantic Coast Pipeline City/County: Suffolk Sampling Date: 12/8/2014
 Applicant/Owner: Dominion State: VA Sampling Point: wsua006_u
 Investigator(s): GB, RL Section, Township, Range: No PLSS in this area
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none Slope (%): 25
 Subregion (LRR or MLRA): T Lat: 36.63093391 Long: -76.89015963 Datum: WGS 1984
 Soil Map Unit Name: Nansemond loamy fine sand, 6 to 15 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Upland data point taken above toe of slope for a semi-permanently flooded PFO wetland located on the floodplain of the Blackwater River.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: no hydrology indicators present	

SOIL

Sampling Point: wsua006_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10YR 2/2	100					SL	
7-15	10YR 4/3	100					LS	
15-24	10YR 5/3	100					LS	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) **(LRR P, T, U)**
- 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- Muck Presence (A8) **(LRR U)**
- 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) **(MLRA 150A)**
- Sandy Mucky Mineral (S1) **(LRR O, S)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) **(LRR P, S, T, U)**

- Polyvalue Below Surface (S8) **(LRR S, T, U)**
- Thin Dark Surface (S9) **(LRR S, T, U)**
- Loamy Mucky Mineral (F1) **(LRR O)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR U)**
- Depleted Ochric (F11) **(MLRA 151)**
- Iron-Manganese Masses (F12) **(LRR O, P, T)**
- Umbric Surface (F13) **(LRR P, T, U)**
- Delta Ochric (F17) **(MLRA 151)**
- Reduced Vertic (F18) **(MLRA 150A, 150B)**
- Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR O)**
- 2 cm Muck (A10) **(LRR S)**
- Reduced Vertic (F18) **(outside MLRA 150A,B)**
- Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:



Photo 1
Upland data point wsua006_u facing east



Photo 2
Upland data point wsua006_u facing north

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Atlantic Coast Pipeline City/County: Suffolk Sampling Date: 12/8/2014
 Applicant/Owner: Dominion State: VA Sampling Point: wsua007s_w
 Investigator(s): GB, RL Section, Township, Range: No PLSS in this area
 Landform (hillslope, terrace, etc.): flat - ditch/berm Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): T Lat: 36.63305944 Long: -76.88251429 Datum: WGS 1984
 Soil Map Unit Name: Tomotley loam NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Wetland data point for a saturated PSS wetland located in a ditch/berm planted pine strip paralleling dirt two track (Access Road 71a). Two main, parallel ditches define the east and west (long axis) extent of feature. Pines in this strip are 5-7 years old, while those in the adjacent upland are 15 years old.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: wsua007s_w

	Absolute % Cover	Dominant Species?	Indicator Status																																	
Tree Stratum (Plot size: <u>30</u>)																																				
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																																
2. _____	_____	_____	_____																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
5. _____	_____	_____	_____																																	
6. _____	_____	_____	_____																																	
7. _____	_____	_____	_____																																	
8. _____	_____	_____	_____																																	
_____ = Total Cover																																				
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>																																		
Sapling/Shrub Stratum (Plot size: <u>15</u>)																																				
1. <u>Pinus taeda</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>	Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: center;">_____</td> <td style="text-align: right;">Multiply by:</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>OBL species</td> <td style="text-align: center;"><u>10</u></td> <td>x 1 =</td> <td style="text-align: center;"><u>10</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;"><u>55</u></td> <td>x 2 =</td> <td style="text-align: center;"><u>110</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;"><u>145</u></td> <td>x 3 =</td> <td style="text-align: center;"><u>435</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;"><u>0</u></td> <td>x 4 =</td> <td style="text-align: center;"><u>0</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;"><u>0</u></td> <td>x 5 =</td> <td style="text-align: center;"><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;"><u>210</u></td> <td>(A)</td> <td style="text-align: center;"><u>555</u></td> (B) </tr> <tr> <td colspan="4" style="text-align: center;">Prevalence Index = B/A = <u>2.64</u></td> </tr> </table>	Total % Cover of:	_____	Multiply by:	_____	OBL species	<u>10</u>	x 1 =	<u>10</u>	FACW species	<u>55</u>	x 2 =	<u>110</u>	FAC species	<u>145</u>	x 3 =	<u>435</u>	FACU species	<u>0</u>	x 4 =	<u>0</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column Totals:	<u>210</u>	(A)	<u>555</u>	Prevalence Index = B/A = <u>2.64</u>			
Total % Cover of:	_____	Multiply by:	_____																																	
OBL species	<u>10</u>	x 1 =	<u>10</u>																																	
FACW species	<u>55</u>	x 2 =	<u>110</u>																																	
FAC species	<u>145</u>	x 3 =	<u>435</u>																																	
FACU species	<u>0</u>	x 4 =	<u>0</u>																																	
UPL species	<u>0</u>	x 5 =	<u>0</u>																																	
Column Totals:	<u>210</u>	(A)	<u>555</u>																																	
Prevalence Index = B/A = <u>2.64</u>																																				
2. <u>Quercus nigra</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																																	
3. <u>Liquidambar styraciflua</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																																	
4. <u>Morella cerifera</u>	<u>8</u>	<u>No</u>	<u>FAC</u>																																	
5. <u>Baccharis halimifolia</u>	<u>7</u>	<u>No</u>	<u>FAC</u>																																	
6. _____	_____	_____	_____																																	
7. _____	_____	_____	_____																																	
8. _____	_____	_____	_____																																	
_____ = Total Cover																																				
50% of total cover: <u>42.5</u>		20% of total cover: <u>17</u>																																		
Herb Stratum (Plot size: <u>5</u>)																																				
1. <u>Dichanthelium scoparium</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)																																
2. <u>Chasmanthium sessiliflorum</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																																	
3. <u>Rhynchospora filifolia</u>	<u>15</u>	<u>No</u>	<u>FACW</u>																																	
4. <u>Juncus effusus</u>	<u>10</u>	<u>No</u>	<u>OBL</u>																																	
5. <u>Andropogon virginicus</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																																	
6. <u>Arundinaria gigantea</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																																	
7. _____	_____	_____	_____																																	
8. _____	_____	_____	_____																																	
9. _____	_____	_____	_____																																	
10. _____	_____	_____	_____																																	
11. _____	_____	_____	_____																																	
12. _____	_____	_____	_____																																	
_____ = Total Cover																																				
50% of total cover: <u>47.5</u>		20% of total cover: <u>19</u>																																		
Woody Vine Stratum (Plot size: <u>30</u>)																																				
1. <u>Gelsemium sempervirens</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.																																
2. <u>Rubus argutus</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																																	
3. <u>Smilax rotundifolia</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																																	
4. _____	_____	_____	_____																																	
5. _____	_____	_____	_____																																	
_____ = Total Cover																																				
50% of total cover: <u>15</u>		20% of total cover: <u>6</u>																																		
Remarks: (If observed, list morphological adaptations below).				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																																

SOIL

Sampling Point: wsua007s_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2	100					SL	
4-9	10YR 4/2	95	10YR 4/6	5	C	M	SL	
9-20	10YR 5/2	88	10YR 4/6	12	C	PL/M	SL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) <input type="checkbox"/> Muck Presence (A8) (LRR U) <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U) <input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Marl (F10) (LRR U) <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O) <input type="checkbox"/> 2 cm Muck (A10) (LRR S) <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 153B) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)

Restrictive Layer (if observed): Type: <u>none</u> Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
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Remarks:



Photo 1
Wetland data point wsua007s_w facing north



Photo 2
Wetland data point wsua007s_w facing west

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Atlantic Coast Pipeline City/County: Suffolk Sampling Date: 12/8/2014
 Applicant/Owner: Dominion State: VA Sampling Point: wsua007_u
 Investigator(s): GB, RL Section, Township, Range: No PLSS in this area
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 2
 Subregion (LRR or MLRA): T Lat: 36.63304892 Long: -76.88238302 Datum: WGS 1984
 Soil Map Unit Name: Tomotley loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Upland data point taken in a pine plantation for a saturated PSS wetland. Pines in upland are 15-years-old, while those in the adjacent wetland strip are about 5-years-old.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: insufficient hydrology indicators present	

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: wsua007_u

	Absolute % Cover	Dominant Species?	Indicator Status																																		
Tree Stratum (Plot size: <u>30</u>)																																					
1. <u><i>Pinus taeda</i></u>	75	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>88.88888888</u> (A/B)																																	
2. <u><i>Liquidambar styraciflua</i></u>	5	No	FAC																																		
3. _____																																					
4. _____																																					
5. _____																																					
6. _____																																					
7. _____																																					
8. _____																																					
80 = Total Cover																																					
50% of total cover: <u>40</u>		20% of total cover: <u>16</u>																																			
Sapling/Shrub Stratum (Plot size: <u>15</u>)																																					
1. <u><i>Liriodendron tulipifera</i></u>	10	Yes	FACU	Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="text-align:right">Total % Cover of:</td> <td style="text-align:center"><u>0</u></td> <td style="text-align:right">Multiply by:</td> <td style="text-align:center"><u>0</u></td> </tr> <tr> <td>OBL species</td> <td style="text-align:center"><u>0</u></td> <td>x 1 =</td> <td style="text-align:center"><u>0</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center"><u>7</u></td> <td>x 2 =</td> <td style="text-align:center"><u>14</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center"><u>153</u></td> <td>x 3 =</td> <td style="text-align:center"><u>459</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center"><u>10</u></td> <td>x 4 =</td> <td style="text-align:center"><u>40</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align:center"><u>0</u></td> <td>x 5 =</td> <td style="text-align:center"><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align:center"><u>170</u></td> <td>(A)</td> <td style="text-align:center"><u>513</u></td> </tr> <tr> <td colspan="2"></td> <td colspan="3" style="text-align:right">Prevalence Index = B/A = <u>3.01</u></td> </tr> </table>	Total % Cover of:	<u>0</u>	Multiply by:	<u>0</u>	OBL species	<u>0</u>	x 1 =	<u>0</u>	FACW species	<u>7</u>	x 2 =	<u>14</u>	FAC species	<u>153</u>	x 3 =	<u>459</u>	FACU species	<u>10</u>	x 4 =	<u>40</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column Totals:	<u>170</u>	(A)	<u>513</u>			Prevalence Index = B/A = <u>3.01</u>		
Total % Cover of:	<u>0</u>	Multiply by:	<u>0</u>																																		
OBL species	<u>0</u>	x 1 =	<u>0</u>																																		
FACW species	<u>7</u>	x 2 =	<u>14</u>																																		
FAC species	<u>153</u>	x 3 =	<u>459</u>																																		
FACU species	<u>10</u>	x 4 =	<u>40</u>																																		
UPL species	<u>0</u>	x 5 =	<u>0</u>																																		
Column Totals:	<u>170</u>	(A)	<u>513</u>																																		
		Prevalence Index = B/A = <u>3.01</u>																																			
2. <u><i>Acer rubrum</i></u>	10	Yes	FAC																																		
3. <u><i>Pinus taeda</i></u>	10	Yes	FAC																																		
4. <u><i>Liquidambar styraciflua</i></u>	10	Yes	FAC																																		
5. <u><i>Quercus nigra</i></u>	4	No	FAC																																		
6. <u><i>Morella cerifera</i></u>	4	No	FAC																																		
7. <u><i>Ilex opaca</i></u>	3	No	FAC																																		
8. <u><i>Vaccinium corymbosum</i></u>	2	No	FACW																																		
53 = Total Cover																																					
50% of total cover: <u>26.5</u>		20% of total cover: <u>10.6</u>																																			
Herb Stratum (Plot size: <u>5</u>)																																					
1. <u><i>Arundinaria gigantea</i></u>	5	Yes	FACW	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)																																	
2. <u><i>Chasmanthium sessiliflorum</i></u>	2	Yes	FAC																																		
3. _____																																					
4. _____																																					
5. _____																																					
6. _____																																					
7. _____																																					
8. _____																																					
9. _____																																					
10. _____																																					
11. _____																																					
12. _____																																					
7 = Total Cover																																					
50% of total cover: <u>3.5</u>		20% of total cover: <u>1.4</u>																																			
Woody Vine Stratum (Plot size: <u>30</u>)																																					
1. <u><i>Gelsemium sempervirens</i></u>	20	Yes	FAC	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.																																	
2. <u><i>Smilax rotundifolia</i></u>	10	Yes	FAC																																		
3. _____																																					
4. _____																																					
5. _____																																					
30 = Total Cover																																					
50% of total cover: <u>15</u>		20% of total cover: <u>6</u>																																			
Hydrophytic Vegetation Present?				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																																	
Remarks: (If observed, list morphological adaptations below).																																					

SOIL

Sampling Point: wsua007_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 2/2	100					SL	
6-10	10YR 3/2	100					SL	
10-20	10YR 5/3	100					SL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) **(LRR P, T, U)**
- 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- Muck Presence (A8) **(LRR U)**
- 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) **(MLRA 150A)**
- Sandy Mucky Mineral (S1) **(LRR O, S)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) **(LRR P, S, T, U)**

- Polyvalue Below Surface (S8) **(LRR S, T, U)**
- Thin Dark Surface (S9) **(LRR S, T, U)**
- Loamy Mucky Mineral (F1) **(LRR O)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR U)**
- Depleted Ochric (F11) **(MLRA 151)**
- Iron-Manganese Masses (F12) **(LRR O, P, T)**
- Umbric Surface (F13) **(LRR P, T, U)**
- Delta Ochric (F17) **(MLRA 151)**
- Reduced Vertic (F18) **(MLRA 150A, 150B)**
- Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR O)**
- 2 cm Muck (A10) **(LRR S)**
- Reduced Vertic (F18) **(outside MLRA 150A,B)**
- Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:



Photo 1
Upland data point wsua007_u facing east



Photo 2
Upland data point wsua007_u facing south

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: City of Suffolk Sampling Date: 2/6/2016
 Applicant/Owner: DOMINION State: VA Sampling Point: wsuc010s_w
 Investigator(s): Team C Section, Township, Range: No PLSS in this area
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR or MLRA): T Lat: 36.63347814 Long: -76.88301154 Datum: WGS 1984
 Soil Map Unit Name: Tetotum fine sandy loam, 0 to 2 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Depression wetland near access road	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>6</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Wetland hydrology indicators present	

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: wsuc010s_w

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		
Sapling/Shrub Stratum (Plot size: <u>15</u>)				
1. <i>Liquidambar styraciflua</i>	20	Yes	FAC	
2. <i>Pinus taeda</i>	20	Yes	FAC	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>20</u>		20% of total cover: <u>8</u>		
Herb Stratum (Plot size: <u>5</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		
Woody Vine Stratum (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		
				Dominance Test worksheet:
				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
				Prevalence Index worksheet:
				Total % Cover of: _____ Multiply by: _____
				OBL species <u>0</u> x 1 = <u>0</u>
				FACW species <u>0</u> x 2 = <u>0</u>
				FAC species <u>40</u> x 3 = <u>120</u>
				FACU species <u>0</u> x 4 = <u>0</u>
				UPL species <u>0</u> x 5 = <u>0</u>
				Column Totals: <u>40</u> (A) <u>120</u> (B)
				Prevalence Index = B/A = <u>3</u>
				Hydrophytic Vegetation Indicators:
				<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
				<input checked="" type="checkbox"/> 2 - Dominance Test is >50%
				<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹
				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Definitions of Four Vegetation Strata:
				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
				Woody vine – All woody vines greater than 3.28 ft in height.
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: wsuc010s_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10 YR 5/2	55	10 YR 4/6	5	C	PL/M	SCL	
	2.5 YR 4/2	40					SCL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
Hydric soil present



Photo 1
Wetland data point WSUC010s_w facing north



Photo 2
Wetland data point WSUC010s_w facing northeast

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: City of Suffolk Sampling Date: 2/6/2016
 Applicant/Owner: DOMINION State: VA Sampling Point: wsuc010_u
 Investigator(s): Team C Section, Township, Range: No PLSS in this area
 Landform (hillslope, terrace, etc.): Slight slope Local relief (concave, convex, none): none Slope (%): 2
 Subregion (LRR or MLRA): T Lat: 36.63361179 Long: -76.88299646 Datum: WGS 1984
 Soil Map Unit Name: Tomotley loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: No hydrology indicators present	

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: wsuc010_u

	Absolute % Cover	Dominant Species?	Indicator Status																									
Tree Stratum (Plot size: <u>30</u>)																												
1. <u><i>Pinus taeda</i></u>	<u>10</u>	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>85.71428571</u> (A/B)																								
2. _____																												
3. _____																												
4. _____																												
5. _____																												
6. _____																												
7. _____																												
50% of total cover: <u>5</u>	<u>10</u>	= Total Cover			Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%;"></td> <td style="width:25%; text-align:center;">Total % Cover of:</td> <td style="width:25%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 1 = <u>0</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 2 = <u>0</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center;"><u>150</u></td> <td style="text-align:center;">x 3 = <u>450</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;"><u>45</u></td> <td style="text-align:center;">x 4 = <u>180</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align:center;"><u>195</u> (A)</td> <td style="text-align:center;"><u>630</u> (B)</td> </tr> <tr> <td colspan="3" style="text-align:center;">Prevalence Index = B/A = <u>3.23</u></td> </tr> </table>		Total % Cover of:	Multiply by:	OBL species	<u>0</u>	x 1 = <u>0</u>	FACW species	<u>0</u>	x 2 = <u>0</u>	FAC species	<u>150</u>	x 3 = <u>450</u>	FACU species	<u>45</u>	x 4 = <u>180</u>	UPL species	<u>0</u>	x 5 = <u>0</u>	Column Totals:	<u>195</u> (A)	<u>630</u> (B)	Prevalence Index = B/A = <u>3.23</u>	
	Total % Cover of:	Multiply by:																										
OBL species	<u>0</u>	x 1 = <u>0</u>																										
FACW species	<u>0</u>	x 2 = <u>0</u>																										
FAC species	<u>150</u>	x 3 = <u>450</u>																										
FACU species	<u>45</u>	x 4 = <u>180</u>																										
UPL species	<u>0</u>	x 5 = <u>0</u>																										
Column Totals:	<u>195</u> (A)	<u>630</u> (B)																										
Prevalence Index = B/A = <u>3.23</u>																												
Sapling/Shrub Stratum (Plot size: <u>15</u>)																												
1. <u><i>Pinus taeda</i></u>	<u>30</u>	Yes	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)																								
2. <u><i>Liquidambar styraciflua</i></u>	<u>20</u>	Yes	FAC																									
3. <u><i>Quercus alba</i></u>	<u>20</u>	Yes	FACU																									
4. <u><i>Ilex opaca</i></u>	<u>10</u>	No	FACU																									
5. _____																												
6. _____																												
7. _____																												
8. _____																												
9. _____																												
50% of total cover: <u>40</u>	<u>80</u>	= Total Cover																										
Herb Stratum (Plot size: <u>5</u>)																												
1. <u><i>Dichanthelium clandestinum</i></u>	<u>50</u>	Yes	FAC	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.																								
2. <u><i>Smilax rotundifolia</i></u>	<u>20</u>	Yes	FAC																									
3. <u><i>Lonicera japonica</i></u>	<u>20</u>	Yes	FAC																									
4. <u><i>Rubus argutus</i></u>	<u>15</u>	No	FACU																									
5. _____																												
6. _____																												
7. _____																												
8. _____																												
9. _____																												
10. _____																												
11. _____																												
50% of total cover: <u>52.5</u>	<u>105</u>	= Total Cover																										
Woody Vine Stratum (Plot size: <u>30</u>)																												
1. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																								
2. _____																												
3. _____																												
4. _____																												
5. _____																												
50% of total cover: <u>0</u>	<u>0</u>	= Total Cover																										

Remarks: (Include photo numbers here or on a separate sheet.)



Photo 1
Upland data point WSUC010_u facing northwest



Photo 2
Upland data point WSUC010_u facing west

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Atlantic Coast Pipeline City/County: Suffolk Sampling Date: 12/8/2014
 Applicant/Owner: Dominion State: VA Sampling Point: wsua008f_w
 Investigator(s): GB, RL Section, Township, Range: No PLSS in this area
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR or MLRA): T Lat: 36.63427931 Long: -76.87807036 Datum: WGS 1984
 Soil Map Unit Name: Nansemond fine sandy loam, 0 to 2 percent slopes NWI classification: PFO1A, PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Wetland data point for a saturated to temporarily flooded PFO wetland located in a wet swale between agricultural fields; perennial stream ssua004 flows through feature. Receives ample run-off and sediment load from adjacent agricultural fields	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>2</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: wsua008f_w

	Absolute % Cover	Dominant Species?	Indicator Status																	
Tree Stratum (Plot size: <u>30</u>)																				
1. <u><i>Pinus taeda</i></u>	20	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>88.88888888</u> (A/B)																
2. <u><i>Quercus phellos</i></u>	15	Yes	FACW																	
3. <u><i>Platanus occidentalis</i></u>	15	Yes	FACW																	
4. <u><i>Liquidambar styraciflua</i></u>	10	No	FAC																	
5. <u><i>Quercus laurifolia</i></u>	10	No	FACW																	
6. <u><i>Acer rubrum</i></u>	5	No	FAC																	
7. <u><i>Quercus michauxii</i></u>	5	No	FACW																	
8. _____																				
80 = Total Cover				Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:right;">Total % Cover of:</td> <td style="width:50%; text-align:left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>67</u></td> <td>x 2 = <u>134</u></td> </tr> <tr> <td>FAC species <u>95</u></td> <td>x 3 = <u>285</u></td> </tr> <tr> <td>FACU species <u>40</u></td> <td>x 4 = <u>160</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>202</u> (A)</td> <td><u>579</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>2.86</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>67</u>	x 2 = <u>134</u>	FAC species <u>95</u>	x 3 = <u>285</u>	FACU species <u>40</u>	x 4 = <u>160</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>202</u> (A)	<u>579</u> (B)	Prevalence Index = B/A = <u>2.86</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>67</u>	x 2 = <u>134</u>																			
FAC species <u>95</u>	x 3 = <u>285</u>																			
FACU species <u>40</u>	x 4 = <u>160</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>202</u> (A)	<u>579</u> (B)																			
Prevalence Index = B/A = <u>2.86</u>																				
50% of total cover: <u>40</u> 20% of total cover: <u>16</u>																				
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. <u><i>Liquidambar styraciflua</i></u>	15	Yes	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)																
2. <u><i>Pinus taeda</i></u>	15	Yes	FAC																	
3. <u><i>Acer rubrum</i></u>	10	Yes	FAC																	
4. <u><i>Quercus phellos</i></u>	10	Yes	FACW																	
5. <u><i>Itea virginica</i></u>	8	No	FACW																	
6. <u><i>Liriodendron tulipifera</i></u>	5	No	FACU																	
7. <u><i>Magnolia virginiana</i></u>	4	No	FACW																	
8. _____																				
67 = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
50% of total cover: <u>33.5</u> 20% of total cover: <u>13.4</u>																				
Herb Stratum (Plot size: <u>5</u>)																				
1. _____				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
0 = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. <u><i>Lonicera japonica</i></u>	35	Yes	FACU																	
2. <u><i>Smilax rotundifolia</i></u>	15	Yes	FAC																	
3. <u><i>Bignonia capreolata</i></u>	5	No	FAC																	
4. _____																				
5. _____																				
55 = Total Cover																				
50% of total cover: <u>27.5</u> 20% of total cover: <u>11</u>																				
Remarks: (If observed, list morphological adaptations below).																				

SOIL

Sampling Point: wsua008f_w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 2/1	100					SIL	
3-10	10YR 3/1	100					SIL	
10-18	10YR 4/1	100					SIL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) **(LRR P, T, U)**
- 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- Muck Presence (A8) **(LRR U)**
- 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) **(MLRA 150A)**
- Sandy Mucky Mineral (S1) **(LRR O, S)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) **(LRR P, S, T, U)**

- Polyvalue Below Surface (S8) **(LRR S, T, U)**
- Thin Dark Surface (S9) **(LRR S, T, U)**
- Loamy Mucky Mineral (F1) **(LRR O)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR U)**
- Depleted Ochric (F11) **(MLRA 151)**
- Iron-Manganese Masses (F12) **(LRR O, P, T)**
- Umbric Surface (F13) **(LRR P, T, U)**
- Delta Ochric (F17) **(MLRA 151)**
- Reduced Vertic (F18) **(MLRA 150A, 150B)**
- Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR O)**
- 2 cm Muck (A10) **(LRR S)**
- Reduced Vertic (F18) **(outside MLRA 150A,B)**
- Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:



Photo 1
Wetland data point wsua008f_w facing east



Photo 2
Wetland data point wsua008f_w facing south

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Atlantic Coast Pipeline City/County: Suffolk Sampling Date: 12/8/2014
 Applicant/Owner: Dominion State: VA Sampling Point: wsua008_u
 Investigator(s): GB, RL Section, Township, Range: No PLSS in this area
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none Slope (%): 4
 Subregion (LRR or MLRA): T Lat: 36.63428544 Long: -76.87794853 Datum: WGS 1984
 Soil Map Unit Name: Nansemond fine sandy loam, 0 to 2 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Upland data point taken above toe of slope for a saturated to temporarily flooded PFO wetland located in a wet swale between agricultural fields.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: no hydrology indicators present	

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: wsua008_u

	Absolute % Cover	Dominant Species?	Indicator Status															
Tree Stratum (Plot size: <u>30</u>)																		
1. <u><i>Pinus taeda</i></u>	30	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>57.14285714</u> (A/B)														
2. <u><i>Liriodendron tulipifera</i></u>	30	Yes	FACU															
3. <u><i>Liquidambar styraciflua</i></u>	15	Yes	FAC															
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
75 = Total Cover				Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="text-align:right;">Total % Cover of:</td> <td style="text-align:right;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>85</u></td> <td>x 3 = <u>255</u></td> </tr> <tr> <td>FACU species <u>100</u></td> <td>x 4 = <u>400</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>185</u> (A)</td> <td><u>655</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.54</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>85</u>	x 3 = <u>255</u>	FACU species <u>100</u>	x 4 = <u>400</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>185</u> (A)	<u>655</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>85</u>	x 3 = <u>255</u>																	
FACU species <u>100</u>	x 4 = <u>400</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>185</u> (A)	<u>655</u> (B)																	
50% of total cover: <u>37.5</u> 20% of total cover: <u>15</u>																		
Sapling/Shrub Stratum (Plot size: <u>15</u>)																		
1. <u><i>Liriodendron tulipifera</i></u>	20	Yes	FACU	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
2. <u><i>Pinus taeda</i></u>	15	Yes	FAC															
3. <u><i>Liquidambar styraciflua</i></u>	15	Yes	FAC															
4. <u><i>Fagus grandifolia</i></u>	5	No	FACU															
5. <u><i>Ilex opaca</i></u>	5	No	FAC															
6. _____																		
7. _____																		
8. _____																		
60 = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
50% of total cover: <u>30</u> 20% of total cover: <u>12</u>																		
Herb Stratum (Plot size: <u>5</u>)																		
1. _____				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
12. _____																		
0 = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														
50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																		
1. <u><i>Lonicera japonica</i></u>	45	Yes	FACU															
2. <u><i>Gelsemium sempervirens</i></u>	5	No	FAC															
3. _____																		
4. _____																		
5. _____																		
50 = Total Cover																		
50% of total cover: <u>25</u> 20% of total cover: <u>10</u>																		
Remarks: (If observed, list morphological adaptations below).																		

SOIL

Sampling Point: wsua008_u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2	100					SL	
4-9	10YR 4/2	100					SL	
9-20	10YR 6/3	100					SL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) **(LRR P, T, U)**
- 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- Muck Presence (A8) **(LRR U)**
- 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) **(MLRA 150A)**
- Sandy Mucky Mineral (S1) **(LRR O, S)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) **(LRR P, S, T, U)**

- Polyvalue Below Surface (S8) **(LRR S, T, U)**
- Thin Dark Surface (S9) **(LRR S, T, U)**
- Loamy Mucky Mineral (F1) **(LRR O)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR U)**
- Depleted Ochric (F11) **(MLRA 151)**
- Iron-Manganese Masses (F12) **(LRR O, P, T)**
- Umbric Surface (F13) **(LRR P, T, U)**
- Delta Ochric (F17) **(MLRA 151)**
- Reduced Vertic (F18) **(MLRA 150A, 150B)**
- Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR O)**
- 2 cm Muck (A10) **(LRR S)**
- Reduced Vertic (F18) **(outside MLRA 150A,B)**
- Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:



Photo 1
Upland data point wsua008_u facing north



Photo 2
Upland data point wsua008_u facing west

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Atlantic Coast Pipeline City/County: Suffolk Sampling Date: 2/20/2015
 Applicant/Owner: Dominion State: VA Sampling Point: wsua021f_w1
 Investigator(s): GB, CC Section, Township, Range: No PLSS in this area
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): microtopography Slope (%): 1
 Subregion (LRR or MLRA): T Lat: 36.63454264 Long: -76.87541666 Datum: WGS 1984
 Soil Map Unit Name: Weston fine sandy loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Wetland data point for a seasonally saturated PFO wetland located on a disturbed flat.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>11</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>8</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: wsua021f_w1

	Absolute % Cover	Dominant Species?	Indicator Status															
Tree Stratum (Plot size: <u>30</u>)																		
1. <u><i>Pinus taeda</i></u>	25	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)														
2. <u><i>Liquidambar styraciflua</i></u>	15	Yes	FAC															
3. <u><i>Nyssa sylvatica</i></u>	15	Yes	FAC															
4. <u><i>Quercus phellos</i></u>	10	No	FACW															
5. <u><i>Acer rubrum</i></u>	5	No	FAC															
6. _____																		
7. _____																		
8. _____																		
70 = Total Cover				Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="text-align:right;">Total % Cover of:</td> <td style="text-align:right;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>16</u></td> <td>x 2 = <u>32</u></td> </tr> <tr> <td>FAC species <u>96</u></td> <td>x 3 = <u>288</u></td> </tr> <tr> <td>FACU species <u>14</u></td> <td>x 4 = <u>56</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>126</u> (A)</td> <td><u>376</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.98</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>16</u>	x 2 = <u>32</u>	FAC species <u>96</u>	x 3 = <u>288</u>	FACU species <u>14</u>	x 4 = <u>56</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>126</u> (A)	<u>376</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>16</u>	x 2 = <u>32</u>																	
FAC species <u>96</u>	x 3 = <u>288</u>																	
FACU species <u>14</u>	x 4 = <u>56</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>126</u> (A)	<u>376</u> (B)																	
50% of total cover: <u>35</u> 20% of total cover: <u>14</u>																		
Sapling/Shrub Stratum (Plot size: <u>15</u>)																		
1. <u><i>Ilex opaca</i></u>	10	Yes	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
2. <u><i>Fagus grandifolia</i></u>	10	Yes	FACU															
3. <u><i>Liquidambar styraciflua</i></u>	5	No	FAC															
4. <u><i>Acer rubrum</i></u>	5	No	FAC															
5. <u><i>Magnolia virginiana</i></u>	3	No	FACW															
6. <u><i>Vaccinium corymbosum</i></u>	3	No	FACW															
7. _____																		
8. _____																		
36 = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
50% of total cover: <u>18</u> 20% of total cover: <u>7.2</u>																		
Herb Stratum (Plot size: <u>5</u>)																		
1. <u><i>Microstegium vimineum</i></u>	10	Yes	FAC	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
12. _____																		
10 = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														
50% of total cover: <u>5</u> 20% of total cover: <u>2</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)																		
1. <u><i>Vitis rotundifolia</i></u>	6	Yes	FAC															
2. <u><i>Lonicera japonica</i></u>	4	Yes	FACU															
3. _____																		
4. _____																		
5. _____																		
10 = Total Cover																		
50% of total cover: <u>5</u> 20% of total cover: <u>2</u>																		
Remarks: (If observed, list morphological adaptations below). herb ID limited due to snow and dormancy																		

SOIL

Sampling Point: wsua021f_w1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 2/1	100					SL	
6-20	10YR 4/1	90	10YR 5/8	10	C	M	SCL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) **(LRR P, T, U)**
- 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- Muck Presence (A8) **(LRR U)**
- 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) **(MLRA 150A)**
- Sandy Mucky Mineral (S1) **(LRR O, S)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) **(LRR P, S, T, U)**

- Polyvalue Below Surface (S8) **(LRR S, T, U)**
- Thin Dark Surface (S9) **(LRR S, T, U)**
- Loamy Mucky Mineral (F1) **(LRR O)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR U)**
- Depleted Ochric (F11) **(MLRA 151)**
- Iron-Manganese Masses (F12) **(LRR O, P, T)**
- Umbric Surface (F13) **(LRR P, T, U)**
- Delta Ochric (F17) **(MLRA 151)**
- Reduced Vertic (F18) **(MLRA 150A, 150B)**
- Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR O)**
- 2 cm Muck (A10) **(LRR S)**
- Reduced Vertic (F18) **(outside MLRA 150A,B)**
- Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:



Photo 1
Wetland data point wsua021f_w1 facing north



Photo 2
Wetland data point wsua021f_w1 facing south

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Atlantic Coast Pipeline City/County: Suffolk Sampling Date: 2/20/2015
 Applicant/Owner: Dominion State: VA Sampling Point: wsua021_u1
 Investigator(s): GB, CC Section, Township, Range: No PLSS in this area
 Landform (hillslope, terrace, etc.): gentle slope Local relief (concave, convex, none): none Slope (%): 2
 Subregion (LRR or MLRA): T Lat: 36.63451786 Long: -76.87525424 Datum: WGS 1984
 Soil Map Unit Name: Lynchburg fine sandy loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Upland data point taken on a gentle slope for a seasonally saturated/seasonally surface saturated PFO mosaic on a disturbed flat.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: no hydrology indicators present	

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: wsua021_u1

	Absolute % Cover	Dominant Species?	Indicator Status															
Tree Stratum (Plot size: <u>30</u>)																		
1. <u><i>Pinus taeda</i></u>	40	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>85.71428571</u> (A/B)														
2. <u><i>Liquidambar styraciflua</i></u>	20	Yes	FAC															
3. <u><i>Acer rubrum</i></u>	10	No	FAC															
4. <u><i>Liriodendron tulipifera</i></u>	8	No	FACU															
5. _____																		
6. _____																		
7. _____																		
8. _____																		
<u>78</u> = Total Cover 50% of total cover: <u>39</u> 20% of total cover: <u>15.6</u>				Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:right;">Total % Cover of:</td> <td style="width:50%; text-align:right;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>108</u></td> <td>x 3 = <u>324</u></td> </tr> <tr> <td>FACU species <u>22</u></td> <td>x 4 = <u>88</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>130</u> (A)</td> <td><u>412</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.16</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>108</u>	x 3 = <u>324</u>	FACU species <u>22</u>	x 4 = <u>88</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>130</u> (A)	<u>412</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>108</u>	x 3 = <u>324</u>																	
FACU species <u>22</u>	x 4 = <u>88</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>130</u> (A)	<u>412</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15</u>)																		
1. <u><i>Morella cerifera</i></u>	12	Yes	FAC															
2. <u><i>Pinus taeda</i></u>	10	Yes	FAC															
3. <u><i>Fagus grandifolia</i></u>	6	No	FACU															
4. <u><i>Ilex opaca</i></u>	4	No	FAC															
5. _____																		
6. _____																		
7. _____																		
8. _____																		
<u>32</u> = Total Cover 50% of total cover: <u>16</u> 20% of total cover: <u>6.4</u>				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
Herb Stratum (Plot size: <u>5</u>)																		
1. _____																		
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
12. _____																		
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.														
Woody Vine Stratum (Plot size: <u>30</u>)																		
1. <u><i>Lonicera japonica</i></u>	8	Yes	FACU															
2. <u><i>Smilax rotundifolia</i></u>	6	Yes	FAC															
3. <u><i>Vitis rotundifolia</i></u>	6	Yes	FAC															
4. _____																		
5. _____																		
<u>20</u> = Total Cover 50% of total cover: <u>10</u> 20% of total cover: <u>4</u>					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>													
Remarks: (If observed, list morphological adaptations below). no herbs viable above snow cover																		

SOIL

Sampling Point: wsua021_u1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10YR 2/2	100					SL	
7-16	10YR 3/2	100					SL	
16-24	10YR 4/2	97	10YR 4/6	3	C	M	SL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	(MLRA 153B)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	³ Indicators of hydrophytic vegetation and	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	wetland hydrology must be present,	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	unless disturbed or problematic.	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)			

Restrictive Layer (if observed): Type: <u>none</u> Depth (inches): _____	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
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Remarks:



Photo 1
Upland data point wsua021_u1 facing east



Photo 2
Upland data point wsua021_u1 facing west